AMERICAN GAS ASSOCIATION

FEBRUARY
1957

Mrs. America agrees . . .

the finest food served in flight is cooked with GAS

This is Mrs. America, 1956 . . . Mrs. Cleo Maletis from Portland, Oregon. Here at 10,000 feet in one of American Airline's Flagships, she knows the food she is being served will be hot and delicious, thanks to Sky Chef and its modern Gas kitchens.

For this flight between Cleveland and New York, the food was prepared at the new Cleveland Hopkins Airport. Fifteen minutes before flight time, the hot meals were transferred from the Magic Chef gas bake ovens and Vulcan gas ranges into warming ovens. Sky Chef serves nearly twelve million meals annually, from San Diego to Boston, and all of them are cooked with Gas.

In Cleveland, Mrs. America inspected the Sky Chef facilities. She learned from Chef John Tokarz that the same Gas equipment used to cook the meals served in flight also prepares hundreds of meals for daily visitors to the airport's main dining room. "It's the same everywhere," she added. "All the famous restaurants I've visited cook with Gas . . . just as I do at home."

Mrs. America's right. If you would like to get the same outstanding results, call your Gas Company now.

American Gas Association.

Welding is a safe job at Pennsylvania Gas—see page 16

IN this issue we report on a number of ways the gas industry seeks to present itself before the public. The ways and means vary, just as "the public" is varied. Last month we plunged into one of the great mass media—national television. Our initial effort, we are told, reached 13 million viewers scattered across the nation. That's our big story for the month—it's on the next page. . . . Following that story is a two-page spread of advertisements aimed at a very select and limited audience. The gas industry is in the market for engineers. The opportunities we have to offer are being told directly to college engineering students, through the medium of their own college's engineering journal. . . . And on page 14, we bring you up-to-date on our continuing effort to capture the attention of our most important customer—the homemaker. The Mrs. America contest, now under complete A. G. A. control, is being expanded and adapted to appeal more and more to American housewives. . . . But the gas industry appears before the public in the most personal and direct way through its employees—that "man from the gas company." He—or she—is the gas company. Not the gas industry, but your company. For a provocative and entertaining view of this employee's importance, we recommend C. E. Jurgensen's article on page 9.

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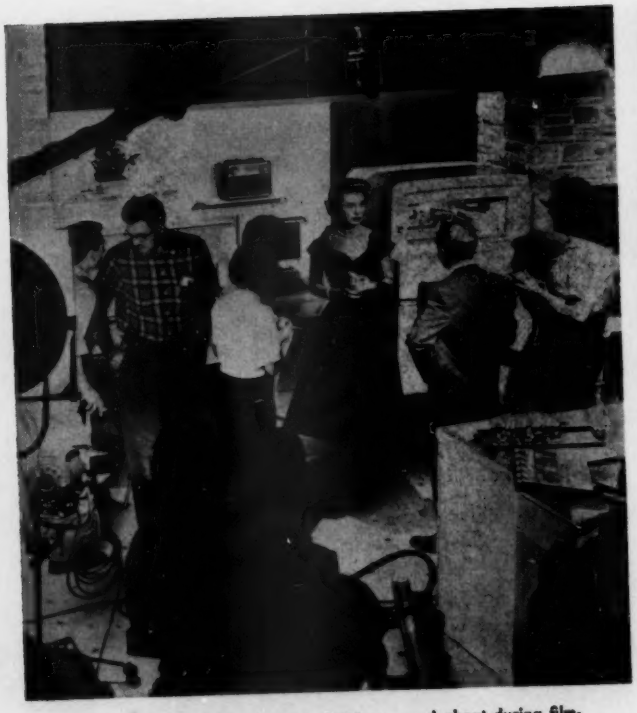
.....tv debut win



Miss Meade remains calm as technicians crowd about during filming of first gas industry commercials for showing on "Playhouse 90"

Industry leaders on shooting set with Miss Meade are (l. to r.) Managing Director Stackpole, President Zachry and Frank Trembly

ritical acclaim. . .

Acclaimed as an overwhelming success, the first gas-sponsored broadcast of "Playhouse 90" drew an audience of 13 million, and was lauded by critics all over the country. "An impeccable production of a difficult, yet arresting play," said Jack Gould of *The New York Times*. "One of the triumphs of the dramatic season," said *The Herald Tribune's* John Crosby, under the heading " 'Playhouse 90' Does It Again."

Over 100 gas company subscribers to the program, working through the American Gas Association, are making certain that—to paraphrase—"The Gas Industry Does It Again." Organized promotion and publicity for the program are stronger than any ever before attempted by the industry.

Advertising mats, available from the Promotion Bureau, are being placed in newspapers across the U. S. Gas appliance display rooms are enlivened by vivid posters showing Julia Meade endorsing each gas appliance, and colorful appliance stickers imprinted with "As seen on 'Playhouse 90.'" Bill stuffers introduce Julia Meade endorsing gas appliances to utility customers, and the folder *Automatic Gas Appliances Star on "Playhouse 90"* introduces her and the program to utility employees. A Pitney-Bowes meter slug, also available from the Promotion Bureau, tells customers, "See the latest automatic gas appliances, 'Playhouse 90,' CBS. Your hostess . . . Julia Meade."

In addition, the A. G. A. Spring Range Display will picture Julia Meade with the line "As seen on 'Playhouse 90.' "

As part of the continuous effort to keep the gas industry informed on the show, the A. G. A. Hollywood Bureau is sending out a series of releases giving information on future programs and stars.

A reel of the show's first 12 commercials, each greeted with great enthusiasm by the A. G. A. National Gas Industry Television Committee, has just been distributed to subscribers of the program. These commercials appear Jan. 10 through May 16.

The Public Information Bureau has sent to all gas company members a complete publicity kit with copy for local newspapers, photographs of Julia Meade with gas appliances, a behind-the-scenes photograph of the shooting of a commercial, and a photograph of the gas industry's TV team—Clare H. Zachry, president of A. G. A.; Frank H. Trembly, chairman of the National Gas Industry Television Committee; C. S. Stackpole, managing director of A. G. A.; and Julia Meade.

Mr. Zachry, Mr. Trembly, and Julia Meade appeared on the Jan. 10 program in a live commercial to introduce the viewers to gas industry sponsorship of the program.

Of Julia Meade, *Newsweek* ("Queen of Commercials," Jan. 21 issue, page 90) said: "The person seen by most TV viewers this month was . . . a tall, titian-haired beauty named Julia Meade." The magazine continued, "Julia Meade is undoubtedly TV's top saleslady, the first one to be seen on three top-rated nighttime shows in his-

(Continued on page 43)

Open recruitment drive with series of advertisements placed in college engineering magazines. A.G.A. Industrial and Commercial program stresses opportunities in industrial use of gas

Tell college engineers industry story

Today's most sought-after young man—the engineering school graduate—is being told of the opportunity that awaits him in the gas industry in a new series of advertisements sponsored by A. G. A.'s Industrial and Commercial Gas Advertising Program.

These advertisements are addressed to the prospective graduate and are scheduled to appear in the engineering magazine of his own college. While he is still on the campus and still planning his career, the young engineer-to-be can learn the story of the use of gas in industrial processes.

Recognition that gas utilities, manufacturers, pipelines and producers are in keen competition with other industries for the services of these men has already resulted in a plan for a national recruiting effort to be initiated under A. G. A. auspices. These efforts will be coordinated through a subcommittee of the Personnel Committee, which is acting at the request of the managing committee of the General Management Section.

The series of advertisements from which the examples on the opposite page were taken, was initiated in the 1957 Association year as part of the industrial and commercial gas advertising program. This type of advertising had been a part of the A. G. A. industrial and commercial program some years ago, but had been dropped in favor of more directly competitive advertising in the commercial gas field.

Advertisements will appear in some 75 college engineering journals. Almost every engineering school publication of importance is included in the list. At least one engineering school in each state is included; in some instances, two or more schools in a single state are represented. The aid of local gas companies in publicizing these advertisements is solicited by A. G. A. Industrial and Commercial Gas Advertising Committee.

If an engineering school in the territory of a gas utility is not included on the advertising schedule, the utility could place the same ads on a direct basis locally.

A complete list of the college publications to be covered, and the time the advertisements are to appear, may be obtained from Norval Jennings, advertising manager, A. G. A. Headquarters. Ask for Advertising Bulletin No. 460.

Fine reproduction proofs, mats or plates of the advertisements are available at cost. Inquiries should be directed to Jerry Laird, A. G. A. account executive, Ketchum, McLeod & Grove, 411 Seventh Avenue, Pittsburgh, Pennsylvania.

Here's how graduate engineers move up in the *GAS* industry ... the nation's sixth largest

The Gas industry—the sixth largest in the nation—has a total investment of over $15 billion. Last year the industry set a new all-time record in number of customers, volume of gas sold, and dollar revenue. In fact, Gas contributed 25% of the total energy needs of the nation as compared with 11.3% in 1940. The Gas industry is a major force in the growth development and economic health of this country.

There are many opportunities for you in the Gas industry. The industry needs engineers, and does not overhire. You won't be regimented. There's always room for advancement. With utility companies and with manufacturers of Gas equipment, there's a future for you as an engineer. Call your nearest Gas Utility. They'll be glad to talk with you about your opportunity in the Gas industry.
American Gas Association

Charles C. Ingram, Jr. became Vice President of Oklahoma Natural Gas Company in less than 15 years

Charles C. Ingram, Jr.
B.S. in Petroleum Engineering, 1929
University of Oklahoma

Charles Ingram has been Vice President of Oil, Land and Geological Department of Oklahoma Natural Gas Company since July of 1945. Mr. Ingram joined the company seventeen years after his graduation from O.U.

Starting as an engineering aide in the Petroleum Engineering Department, he worked his way through the Engineering, Production and Geological departments to his present position. He has served as Chairman of the Petroleum Division of the Oklahoma City Chamber of Commerce.

After 6 years with Lone Star Gas, Bill Collins took over a new job in a new field for the company

Warren A. Collins, Jr.
B.S. in Mechanical Engineering, 1947
Univ. of Oklahoma

Bill Collins is employed by the Lone Star Gas Company in Dallas as Sales Engineer of Air Conditioning and Industrials. Bill supervises over 600 square miles in North Texas and southern Oklahoma, comprising Lone Star's Industrial Gas Division.

Bill has worked primarily in the design, sales and installation of air-conditioning equipment, both commercial and industrial, ever since graduation. When it was found that a large part of Southwestern Gas Company's load was attributable to design and installation as well as sales and service problems, a special department was organized in 1951. Bill was put in charge

Joe Drechsler, after 5 years with Baltimore Gas and Electric Company, is now Assistant Superintendent in a department with over 450 employees.

Joseph J. Drechsler
B.E. in Mechanical Engineering, 1946, Johns Hopkins University

After completing the company's Student Engineering Training Program, Joe spent one year in the Gas and Steam Turbine Laboratory. He was then promoted through various levels of engineering and supervisory assignments, to his present job as Assistant Superintendent, April 1, 1956. This department has over 450 employees and is responsible for the installation and servicing of industrial, commercial and domestic gas appliances on customers' premises, and the installation and servicing of gas and steam metering and pressure regulating equipment.

In just 4½ years with Southern California Gas Company of California, Robert E. Von Der Lohe has become Manager of Commercial and Industrial Sales

Robert E. Von Der Lohe
B.S. in Industrial Engineering, 1946, University of Southern California

After two years with a construction engineering firm, Bob Von Der Lohe joined the gas company and began his search for the right position. Starting as an assistant salesman in 1946, Bob has moved up through the jobs of industrial sales engineer and staff representative-industrial sales, to his present post as Manager, Commercial and Industrial Sales. Bob likes many phases of his duties and assignments—the variety of activity and the opportunities to meet and work with people in management and technical positions in many different companies and learn about the ways in which gas equipment and gas can improve their production efficiency.

Gas air conditions shopping center

World's largest shopping center under one roof chooses gas to power all-year heating and cooling

By RALPH ETNIER

Minneapolis Gas Company
Suburban Division

Natural gas supplies year-round air conditioning to the world's largest shopping center under one roof; Southdale Regional Shopping Center in Edina, Minnesota.

Southdale is a multi-storied building with a basement storage area, two levels of store areas and a top level mechanical equipment area. The Garden Court—a block long, three stories high, and completely enclosed by a louvered skylight—extends from the first or ground level to the roof. The 67 individual stores in the Center are built around and face this court. Total gross floor area of the stores, arcades and public areas under the one roof is approximately 800,000 sq. feet.

The Southdale installation is the largest commercial heat pump in the United States. Natural gas engines were chosen as a power source over other equipment available to take advantage of inherently lower operating costs.

Ventilation air is supplied to all 67 stores by two large fan coil units located in the penthouse. These large units take in 100 per cent outside air, condition it, and send it into the Garden Court which, in this case, is used as a large (240 ft. by 100 ft. by 3 stories high) plenum chamber. The ventilation air is cooled by well water pumped through the coils of the fan coil units. During the winter months, the ventilation air is heated by circulating the hot water returning from the condensers in the tenant areas through the same coils.

Maximum air flow through these two ventilation units is 120,000 cu. ft. per minute. This volume is automatically decreased as the weather gets cooler until it is reduced to 60,000 cu. ft. per minute when the outdoor temperature reaches —20°F. Each store receives its ventila-

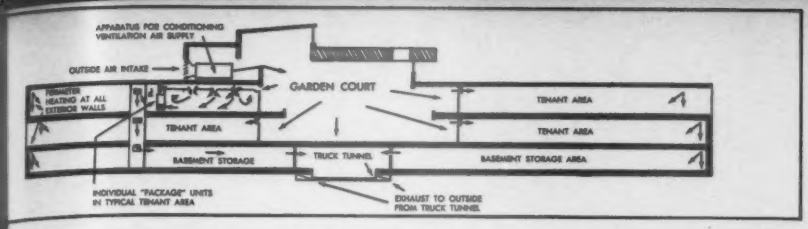


Fig. 1 shows sequence of air handling, with ventilation air conditioned for garden court, which serves as huge plenum. Heating is at perimeter of exterior walls

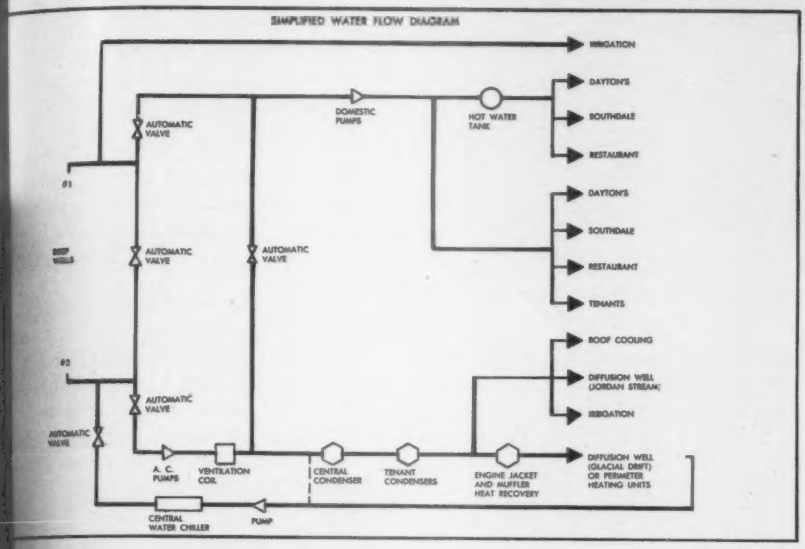


Fig. 2 shows water flow arrangement in a closed cycle which achieves an exceptionally high coefficient in both cooling and heating. Note hot water supply

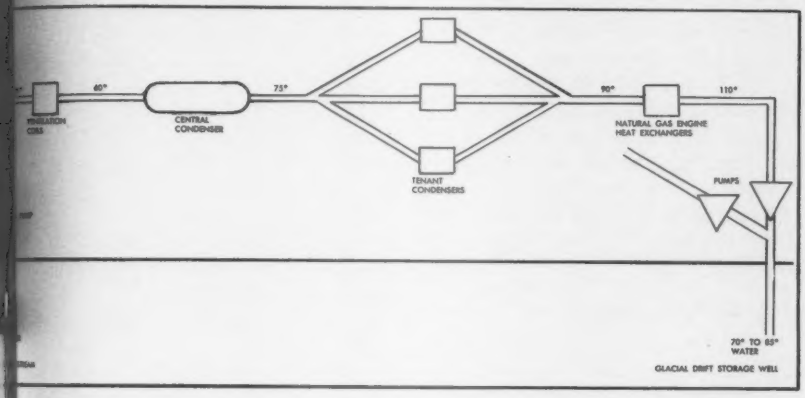


Fig. 3 shows schematic condenser water flow diagram, with cold water drawn from earth for cooling, with excess hot water stored in another well to be used in heating season

tion air through a perforated grill extended across the entire front of the store. (Fig. 1)

Air is exhausted from the stores into one of six exhaust shafts which extend from the basement to the upper level. The volume of air exhausted is controlled by dampers in the exhaust ducts from each store area. A reversal of normal air flow occurs here as all of this exhaust air is pulled down into the basement area and exhausted by another large fan to the outside from the truck tunnel, carrying with it the exhaust fumes from the trucks.

This ventilating system maintains a constant "springtime" temperature and humidity condition in the Garden Court and supplies all areas with 72°F ventilation air.

In addition to the conditioned ventilation air supply, each tenant area will use a packaged air conditioner to take care of the internal heat gain (lights, people, and appliances) of their individual area. Many of these units will operate the year around on cooling.

The Dayton store area, approximately 180,000 sq. ft., is cooled by chilled water supplied by the heat pumps. The chilled water is circulated through the fan coil units suspended from the ceiling around the escalators. The fan coil units circulate the air through a duct system to perforated ceiling panels, thence to the occupied area. Equipment floor space required in the Dayton store area is only 15 to 20 sq. ft. per floor. The store area will require cooling all year, at times during business hours.

The heat lost through the exterior walls of the Center is replaced by a perimeter heating system, consisting of a number of fan and coil units with duct work attached, located strategically around the perimeter of the building.

The entire Southdale Center area will

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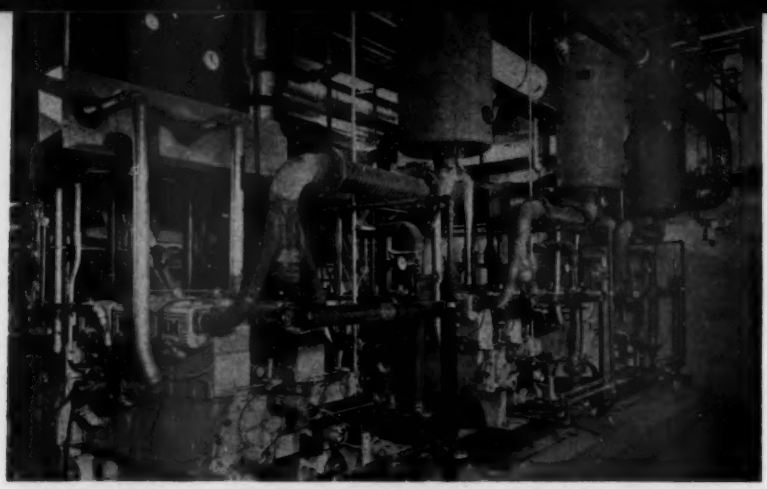


Five natural gas engines shown above are built by Minneapolis-Moline. They power five York 16-cylinder high speed compressors. Gas engines operate at a top speed of 1,200 rpm, with speed modulated cutomatically to 700 rpm, depending on load

be held under a slight positive pressure at all times. The total cooling load for the Center is estimated at 2,000 tons with a breakdown of 700 tons for Dayton's store, 700 tons for tenant areas, and 600 tons for ventilation air precooling.

The internal water supply, for purposes other than cooling, is heated to a minimum of 70°F, thus eliminating the need for insulating the piping to prevent "sweating."

The penthouse equipment room is the heart of this unique air conditioning system. All of the heat pump equipment is mounted on a large concrete slab, "floating" on a series of coil springs. This allows it to move independently of the rest of the building and eliminates the transfer of vibration from the equipment to the main structure.

Mounted on this slab are five York Double "V" Type 16-cylinder, high speed compressors powered by five Minneapolis-Moline internal combustion engines operating on natural gas, two water chillers, two condensers, and two receivers. Space has been provided on the slab for the addition of one more compressor and the gas engine required to run it when the Center expands.

The natural gas engines are Minneapolis-Moline Model 1600-12A, 12-cylinder dual engines with built-in gear speed increasers and extra high (8.25 to 1) compression ratio. The engines will operate at a top speed of 1200 rpm and an output shaft speed (compressor speed) of 1800 rpm. Each engine is controlled to automatically modulate its speed from 1200 rpm to 700 rpm depending on load requirements. Maximum required brake horse power is 160 bhp per engine at 1800 rpm output shaft speed. Fuel requirement is nine cubic feet of natural gas (1000 Btu per cu. ft.; 0.69 sp. gr.) per horse power hour.

Operation and operating speeds of the natural gas engines are controlled by the water temperature as it leaves the water chillers. The chilled water circuit is fundamentally a closed system but provisions have been made to "bleed off" water from the circuit and to replace this "bleed off" water with well water.

The water leaving the water chillers is thermostatically controlled to hold 40°F. As this temperature starts to rise the natural gas engines are automatically started or their speed is increased, one at a time, until enough engines are running to hold the temperature of the water leaving the chiller at 40°F.

Engines cut speed

The chilled water is pumped through the water chillers and then out through the fan coil units in Dayton's, where it picks up the space heat and returns to the water chillers. The water returning to the water chillers will be at approximately 50° to 52°F. As the temperature of the leaving chilled water starts to fall, the natural gas engines and compressors will slow down to approximately half speed and then drop off the line and stop until there are only those engines running needed to hold the temperature.

The designers of this system have gone the meat packing industry one better—they are even making use of the squeal. By an ingenious arrangement of heat exchangers and water flow control exceptionally high efficiency will be obtained from this installation. The coefficient of performance on the cooling cycle will be approximately 3 to 1 and on the heating cycle 4 to 1.

The water used for cooling the natural gas engines is circulated through a closed system. The cooling water is first circulated through a coil in the crankcase of the engine, picking up the heat from the oil. It is then circulated through the engine jacket where it picks up the heat of combustion and friction. From the engine jacket it is circulated through an exhaust gas heat exchanger where it is further heated by removing a large portion of the exhaust gas heat. This hot water is then circulated through one of the water-to-water heat exchangers where it loses its heat to the condensing water returning from the tenant package units. (Fig. 2)

One of the above heat exchangers supplies hot water for the lavoratories, etc., in the entire Southdale Center. Another of the heat exchangers furnishes hot water for the perimeter heating system. A third heat exchanger heats a glycol solution for the coils of the snow melting system under the truck ramps.

When the outdoor temperature is above freezing a portion of the water is pumped out on the roof where the heat is dissipated to the surrounding air. The water on the roof is to be held at a depth of 2 inches in the summer. The excess hot condensing water, not used as above, is pumped down into a glacial drift storage well. (Fig. 3) Some of the water used in the condensing side of the air conditioning equipment is bypassed around the heat exchangers and is returned to the Jordan Stream through a non-pumping diffusion well.

The amount of heat generated by the natural gas engines is, of course, determined by the number of engines running and by their speed. When the perimeter heating system signals for additional heat during winter operation, a valve is automatically opened in the "bleed off" line allowing some of the water returning from the cooling fan coil units in the Dayton store (about 44°F) to "bleed off" into the waste water system. This water is then replaced by 50°F well water.

As this warmer water is pumped through the water chiller, the rise in temperature is sensed by the chilled water thermostat which in turn, through electric relays, calls for additional engines or more speed from the engines running to combat the rise. As more heat is required, more well water is added to the chilled water system and

(Continued on page 29)

The public and your employees

By C. E. JURGENSEN
Assistant Vice-president, Personnel
Minneapolis Gas Company

Psychologists have found that people react on the basis of attitudes. Attitudes, in turn, are more likely to be based on feelings and emotions than on information and intellect. True, attitudes often arise from the possession of information, but such information is far from a requisite.

These findings significantly indicate that we can better build favorable public relations by establishing attitudes on the basis of feelings rather than on information.

One of our more potent means in doing this, is to be found in our employees.

The public cannot avoid contact with employees of the gas company; and when someone does have such contact, he identifies the employee with the company to such extent that the employee becomes the company. For example, all of Minneapolis Gas Company automobiles are painted a distinctive shade of blue. On the door of each car is a reflectorized blue shield insignia.

The purpose is advertising. Having a total of 366 cars which total almost half a million miles of driving per month, it is obvious that the cars are seen by many persons.

When one of our cars is driven down a Minneapolis street, that car becomes, for the moment, the Minneapolis Gas Company to any observer. If the driver exceeds the speed limit, if he goes through a stop sign, if he rushes a yellow traffic light, if he makes a left-hand turn from the right-hand lane, or engages in any other illegal or careless driving activity, he does so as Mr. Gas Company rather than as Mr. Individual.

A couple of years ago one of our meter installation men left the house in which he was working to go to his truck for a fitting. He saw a woman lying in the yard, apparently suffering a heart attack. Our employee immediately had another member of the family call a doctor while he gave first aid. The woman lived, and the doctor gave credit for saving her life to the meter installer.

The family phoned me a few days later to thank the man for doing such a fine job. It was obvious that the family's appreciation was not limited to the employee. In reality, the thanks were being directed toward the company with the employee functioning as an instrument of the company.

Recently a Protestant minister telephoned to say he had been working in his study on his sermon for the following Sunday. Looking out the window he saw an elderly woman drive to the curb and stop with a flat tire. While she was looking at the tire, a gas company car drove up, stopped, the serviceman got out, changed the tire for the woman, refused payment for his work, and then drove off waving back to the woman.

In reporting the incident to me, the minister spent little time complimenting the man for doing his good deed, but spent much time telling me what a wonderful company we were to be employing men of that type. He generalized on the basis of this one incident and more or less assumed that all employees would have done the same thing.

At a recent luncheon meeting, I was seated next to the executive director of the Minneapolis Community Chest. He had nothing but praise to give to the Minneapolis Gas Company. So far as he was concerned, the company could do no wrong.

His opinion seemed to stem from three things: First, our president has been very active in the Community Chest and has headed the larger firms division. Second, one of our employees, a union member, is not only a member of the Community Chest Speakers Bureau (and a very excellent member) but has achieved the distinction of over 80 speeches during the campaign, thereby far exceeding the record established by any other person. Third, one of our supervisors functioned as an area captain in one of the more difficult parts of the city and achieved far greater success than had ever been obtained in previous campaigns.

Though the work was done by individuals, the credit was given the company. Psychologically, it is as though the speaker felt that such fine and outstanding men would not be associated with any company which did not reach, or nearly reach perfection!

Manufacturing companies tend to be known by their products, for customers typically have no contact with the employees. Service industries, including utilities, are different. Contact with employees is the rule rather than the exception.

If the *public's* attitude toward the gas company is influenced by the employees of the company, the attitude of *customers* is even more affected by the employees.

Excerpts from an address given at the A. G. A. Public Relations Workshop, held in Des Moines, Iowa, on December 5, 1956.

A customer is a specialized segment of the public who cannot escape contact with utility employees. Salesmen. Installers. Meter Readers. Cashiers. Servicemen. Not to mention some of the contacts we all wish were unnecessary: Credit Manager, High Bill Investigator.

A customer considers the company to be tactful or tactless to the extent that individual employees are tactful or tactless. The customer considers the company to be careful or careless to the extent that individual employees are careful or careless.

Perhaps we are too prone to overlook the effect of an employee on a single customer. Such mundane activity does not fit a stereotype of glamorous public relations activities where thousands of people are exposed and influenced by full page newspaper ads, brilliantly lighted and animated billboards, TV spectaculars, and newspaper headlines.

A single customer appears to be small and insignificant. The public in general appears to be large and important.

Gas companies might well profit from a finding of experimental psychology. Long ago, psychologists exploded the myth of a group mind, and proved that the so-called group mind is nothing other than the sum of all of the individuals making up that group. If we overlook the lowly individual while concentrating on the delusively glorified group, we may find that our public relations have much glitter but little substance.

The single individuals, the little things, are what give substance to an effective public relations program.

The story is told that Michelangelo was carving a statue when visited by some friends. Those same friends again came to his studio a few months later. They were amazed to find Michelangelo still working on the same statue. He explained that he had changed the shape of the nose, taken off part of one ear, reduced the length of a finger. "But those are all trifles," exclaimed one of the friends. "Ah," Michelangelo is reported to have said, "trifles make perfection, and perfection is no trifle."

Some time ago I learned of an installer who delivered a water heater on a cold, wet day. When the housewife came to the door, he was removing his rubbers. The housewife told him not to bother because the stairs were scheduled to be washed later that day. The installer replied to the effect that there was no point in his making her work any harder for her. The customer, reporting this incident, praised the attitudes and behavior of the installer, ending with the statement, "It's always a pleasure to deal with a company like yours."

Lest you think all our installers are perfection personified, let me mention another occasion where two installation men delivered a range about ten years ago. It replaced a stove about 15 years old. The housewife was glowing while watching the installers work. Then one of the installation men slapped the end of the range with his open hand and commented, "They sure make these things cheap nowadays, don't they?"

True, the materials and workmanship of those postwar ranges were far from what any manufacturer or utility desired. But, customers were still spending their hard earned money for those ranges, and in spite of the defects they were nevertheless far superior to the old stoves being replaced. Fortunately, the purchaser in this case was my wife, so no public relations harm was done.

To illustrate another customer incident: A serviceman carefully, perhaps ostentatiously, laid out a drop cloth on which he placed his tool box and then the separate tools. Noting the woman of the house watching him, he commented to the effect that he would do his best to see he did not soil her nice clean floor in any way. The woman, who reported the incident, told me that the floor really wasn't clean, but she highly appreciated the serviceman's thoughtfulness.

Incidentally, this example also illustrates one of the great dangers of public relations resulting from inability to be positive of our prediction of the customer's reaction. For example, if the serviceman had made too much of an

(Continued on page 46)

Kurwin R. Boyes, A.G.A. secretary, dies suddenly

Kurwin R. Boyes

Kurwin Robert Boyes, secretary of the American Gas Association since 1926, died suddenly the night of January 30, at his home, 5 Tudor City Place, New York City. His age was 60.

Mr. Boyes was born March 30, 1896, in Providence, R. I., the son of Thomas E. and Mary MacLeod Boyes. He attended Brown University and Harvard School of Business.

While attending Brown from 1919 to 1923, he also served as assistant to the president of the Providence Gas Company. He joined the American Gas Association in 1923 as assistant to the managing director and three years later was named secretary of the Association.

Mr. Boyes served as secretary of the Rate Committee from its inception. Upon relinquishing his duties with the group in 1955, the committee presented to him an engraved certificate which spoke of "his profound knowledge of general rate history" and praised his "unstinting" efforts in behalf of the gas industry.

Just a year ago, the Personnel Committee, which Mr. Boyes also served as secretary, honored him at a luncheon commemorating his 33 years with A. G. A.

Mr. Boyes was in charge of Association membership, which increased from 3,000 to nearly 8,000 during his years with the Association. In addition he served as convention manager and directed the A. G. A. Library.

Mr. Boyes was a member of the American Management Association, American Chemical Society, American Trade Association Executives, the Brown University Club of New York, the Baptist Church and the Masonic order.

He is survived by a brother, E. L. Boyes, Cranston, R. I.

Funeral services were held February 2 in New York. Burial was at Providence.

Automatic lighting: new commercial requirement

A milestone of progress in the development of commercial gas equipment was reached on January 1, 1957. The requirement that automatic lighting must be provided on commercial cooking equipment in order to secure the A. G. A. Seal of Approval went into effect on that date. The requirement applies to range ovens, portable deck ovens and deep fat fryers.

The Approval Requirements Committee has had the subject of automatic lighting on commercial equipment under consideration for some time and at its March 20, 1956 meeting adopted revisions to standards for commercial cooking equipment. These require the use of automatic pilots of the complete shut-off type in conjunction with burners located in enclosed compartments or deep fat fryers, portable baking and roasting ovens, and hotel and restaurant ranges. Excepted were top sections of hotel and restaurant ranges.

These new requirements were adopted to become American Standard effective January 1, 1957, and apply to all approved equipment produced after this date.

What is automatic ignition? What does it do?

Automatic ignition combines safety with automaticity, convenience with dependable operation, time-saving with freedom from concern of manual operation.

The new pilot now makes these appliances completely automatic. Once the pilot has been lighted, and this should be done as soon as the equipment has been installed, it is only necessary to open or close the gas burner valve and heat is automatically turned on.

The automatic pilot is on watch constantly. If because of some unforeseen condition the pilot goes out, the automatic device cuts off the main gas supply. This insures complete safety.

Are automatic ignition controls rugged and dependable?

In house heating, water heating and industrial heating applications, automatic ignition controls have been used for long years of trouble-free operation requiring little or no service or maintenance. The manufacturers of these controls have built the highest degree of husky reliability into their instruments.

The new automatic pilot used on commercial gas cooking appliances is a combination pilot burner and thermocouple in one compact unit. The pilots produce an extremely stable blue flame without primary air (an insurance against failures due to linting). Also, they may be used on all gases. With their low gas input they have little or no effect on oven temperature rise. In fact, one manufacturer states, "Low gas input insures a cool standby operation."

Are manufacturers ready to deliver?

Are manufacturers equipped and ready to deliver ovens and fryers with the A.G.A. Seal of Approval? The answer is "Yes." For years the leading manufacturers have offered automatic pilots as optional equipment. For manufacturers it is merely a matter of adjusting price schedules and production to include this equipment as a *standard* for all approved models.

Who sells whom on automatic ignition?

It's the job of the manufacturer, the equipment dealer and the gas utility to explain the positive advantages and the convenience of automatic ignition. It must be a positive approach. The gas industry can be of inestimable aid in the promotion of this new feature. There is no stooping, no more matches or tapers, no more waiting, and it's foolproof.

Automatic ignition, considering its many advantages, is cheap. Leading manufacturers will charge only a few dollars above their past standard quoted prices for this valuable feature.

Gas companies should be prepared to instruct dealers and customers on the use

(Continued on page 47)

● *Gas industry's net income is expected to top one billion dollar m*, wi

Forecast 10 years of 'unprecedented growth'

A 10-year period of unprecedented growth in the gas utility and pipeline industry is forecast by the American Gas Association, which predicts the industry's net income will soar to more than one billion dollars a year by 1965. The estimates are from a long-range study just completed by the A. G. A. Bureau of Statistics.

Total net income of the gas utility and pipeline industry is expected to rise to $1.03 billion by 1965, an increase of over 63 per cent from the estimated $630 million of net income last year, and more than a five-fold rise from the $201 million in 1946.

These increases in net income, available to stockholders and for use for future construction, reflect an anticipated increase in total operating revenues (including both sales for resale and sales to ultimate consumers) from $6.1 billion in 1956 to $10.8 billion by 1965.

Total operating expenses will increase in a similar manner from $4.07 billion in 1956 to $7.26 billion by 1965. Total operating revenue deductions, which include depreciation, depletion, amortization, and taxes, as well as operating expenses, will rise from $5.3 billion to nearly $9.5 billion in the same period. Total income deductions, representing primarily interest on long term debt, will nearly double during the period from $230 million to $440 million.

The latter increase reflects the substantially greater value of utility gas plant which will be necessary to achieve these record 1965 revenue and net income levels, and the necessary large reliance upon debt issues for the necessary funds. Gross gas plant in service is expected to grow from $14.8 billion at the end of 1956 to $30.4 billion by 1965.

During the next decade the gas utility and pipeline industry will spend $18.9 billion on new construction, 83 per cent greater than the $10.3 billion expended in the decade following the end of World War II. As in the past, the largest proportion of new construction expenditures will be spent on transmission facili-

COMPOSITE INCOME ACCOUNTS, TOTAL GAS UTILITY AND PIPELINE INDUSTRY 1956-1965

(Millions)

	1956	1957	1958	1959	1960	1965
Total operating revenues	$6,080	$6,550	$7,080	$7,620	$8,200	$10,830
Operating expenses—maintenance	210	240	260	280	300	430
Operating expenses—operation	3,860	4,150	4,480	4,830	5,190	6,830
Total operating expenses	4,070	4,390	4,740	5,110	5,490	7,260
Depreciation, retirements, depletion, etc.	400	440	480	530	560	800
Federal income taxes	500	520	560	590	640	800
All other taxes	310	350	370	400	430	610
Total taxes	810	870	930	990	1,070	1,410
Total operating revenue deductions	5,280	5,700	6,150	6,630	7,120	9,470
Net operating revenues	800	850	930	990	1,080	1,360
Other income (non-operating)	60	70	70	80	80	110
Gross income	860	920	1,000	1,070	1,160	1,470
Interest on long-term debt	220	260	290	320	340	480
Other income deductions	10	a	a	(10)	a	(40)
Total income deductions	230	260	290	310	340	440
Net income	630	660	710	760	820	1,030

a. Less than $5,000,000.

..., with expanding construction expenditures and main extensions keeping pace

ties with such installations requiring $8.0 billion during the decade. Miles of transmission main, estimated at 155,000 at the end of 1956, will increase by 40 per cent to a total of 218,000 by 1965.

About $6.9 billion will be spent on distribution facilities to permit the industry to serve the expected annual growth of almost one million customers during each of the next ten years. By the end of 1965 total miles of distribution main will aggregate 446,000, up almost 40 per cent from the 320,000 miles in operation at the end of last year.

Underground storage facilities will be enlarged and new fields and pools developed at an expenditure of over $600 million in the coming decade. The search for additional natural gas production by gas utilities and pipelines, and the construction of larger production facilities, will necessitate expenditures of over $2.5 billion during the next ten-year period.

All of the estimates referred to above are predicated in large measure upon previously issued projections of gas industry customers, sales, and revenues in 1965. It is expected that average customers during 1965 will equal 38.5 million compared to an average of 29.6 million last year. Total revenues from sales to ultimate consumers will aggregate $7.04 billion in 1965, up from $3.95 billion last year, while sales volume will show similar increases.

To enable the gas industry to serve the public efficiently it is estimated that total employees will reach 241,000 by 1965, an increase of 40,000 over the number estimated to be employed by the industry during 1956. Assuming a comparable increase in employee productivity, inflation within the economy, and improvement in the economic status of industry employees as that which has occurred during the past decade, the average pay per employee will aggregate $7,480 in 1965, up from $4,910 last year. Total gas industry payroll will almost double during the decade from nearly $988 million during last year to over $1.8 billion during 1965.

ESTIMATED GAS UTILITY AND PIPELINE CONSTRUCTION EXPENDITURES, BY TYPE OF FACILITY 1956-1965

(Millions)

	1956	1957	1958	1959	1960	1961-1965	Total Forecast 1956-1965	Actual Total 1946-1955
Total	$1,506	$1,942	$1,745	$1,954	$1,902	$9,805	$18,854	$10,273
Production and other storage	236	207	283	175	266	1,375	2,542	1,590
Transmission	615	939	590	785	818	4,215	7,962	5,244
Underground storage	56	44	89	84	57	295	625	a
Distribution	532	666	684	799	685	3,530	6,896	3,033
General	67	86	99	111	76	390	829	406
Gross gas plant[b]	14,830	16,570	18,140	19,890	21,600	30,425		

a. Included with "Production and Other Storage."
b. Plant as of December 31; excludes construction work in progress.

MILES OF MAIN, BY TYPE OF MAIN, 1956-1965

(Thousands)

Year	Total	Miles of Distribution Mains	Miles of Transmission Mains	Miles of Field & Gathering Mains
1956	524,800	320,000	155,000	49,800
1957	545,700	334,000	160,000	51,700
1958	567,000	346,000	167,000	54,000
1959	592,000	360,000	175,000	57,000
1960	616,500	375,000	182,000	59,500
1965	736,000	446,000	218,000	72,000

GAS UTILITY EMPLOYEES AND PAYROLL, 1956-1965

Year	Number of Employees	Total Payroll (Thousands)	Average per Employee
1956	201,000	$ 987,714	$4,910
1957	205,500	1,059,353	5,160
1958	209,000	1,132,362	5,420
1959	214,000	1,217,874	5,690
1960	219,000	1,308,525	5,980
1965	241,000	1,801,475	7,480

Expand Mrs. America contest

The public will be invited to the giant national finals of this year's Mrs. America contest, to be held at the War Memorial Auditorium, Ft. Lauderdale, Fla., May 7-14

W. W. Selzer is sponsor of program in which over 100 utilities participate

The gas industry's Mrs. America promotion this year is entering a new phase in its growth, according to W. W. Selzer, General Promotional Planning Committee sponsor for the Mrs. America program.

In keeping up with its aim to provide a promotion that will give the gas industry a maximum of good will and publicity plus an all-around "Gas Homemaker" symbol, American Gas Association this year has taken over complete and absolute control of the Mrs. America contest.

In taking this step, Mr. Selzer and the A. G. A. staff worked in accordance with the recommendations of several industry groups: General Promotional Planning Committee members and a special Home Service Advisory Group who were invited to attend the last national finals to observe procedures and suggest improvements, and the 65 of the 100 participating gas companies who sent in reports and comments on the running of the contest.

After all these observations were analyzed, the decision was made that A. G. A. would take over complete control of the contest.

This control includes the running of the national finals and the signing of the sponsors, as well as staging the local and state contests in all 48 states and the District of Columbia. Previously, A. G. A. had run contests in only some of the states (last year the number was 40) and had possessed only the right to veto any prospective sponsors it did not approve.

As a result of taking over the contest completely, A. G. A. has made many changes in the contest format. One of the big changes is the moving of the national finals to Fort Lauderdale, Fla., where a finals can be held that will be bigger and better on many counts—staging, homemaking competitions, and publicity coverage.

The 49 finalists and their husbands will be housed in a beautiful new hotel on Fort Lauderdale's waterfront. This is the Beach Club Hotel, so named because it is built on the grounds of what had previously been an exclusive private club. The homemaking competitions will all be staged in Fort Lauderdale's city-owned Memorial Auditorium, and will be open to the public.

The competitions will be spread over three evenings during the contest week of May 7-14. Set up just in front of the stage in the auditorium will be 15 gas ranges, 15 sewing machines, 15 ironing boards, cabinets containing the foods the contestants will use to prepare their dishes, and tables bearing silverware for a table-setting contest.

During the three nights the con-

testants will take turns cooking, baking, sewing, ironing and setting a table, and at the same time will be interviewed by a master of ceremonies with a roving microphone. At the end of the three evenings, each of the contestants will have competed in each of the homemaking events, and her efforts will have been carefully evaluated by four home economist judges after they have circulated among the contestants.

A change has also been made in the method of judging at the national finals. There will be a total of seven judges, four of whom will be widely-known home economists who will screen contestants on their over-all homemaking. These home economists will select from the 49 state finalists the six best homemakers—looking for the best *all-around* homemakers, those who have *all* the homemaking skills to an acceptable degree. Then three other judges—experts on personality, charm, and stage presence—will select the winner from among these six best homemakers. They will judge on her attractiveness, her bearing, her grooming, her ability to speak and to think on her feet. In general, these judges will be looking for the woman best qualified to represent the married homemakers of America.

Under this new judging system, the gas industry can be assured of having the most talented, most personable, most attractive homemaker of the 49 final contestants as the new Mrs. America.

These are the homemaking events in which the 49 contestants will compete in Florida:

Menu Planning: Each contestant must list menus for breakfast, lunch and dinner, plus recipes for the main dishes.

Refrigerated Dish: Each contestant must prepare a refrigerated dessert or salad.

Chocolate Dessert: Each contestant must prepare a cake or other dessert using chocolate.

Meal Preparation: Each contestant must prepare a complete meal featuring a meat main dish.

Tablesetting: Each contestant must set a table for a "special occasion."

Sewing: Each contestant must sew something on a sewing machine before the judges.

Ironing: Each contestant must iron a man's shirt.

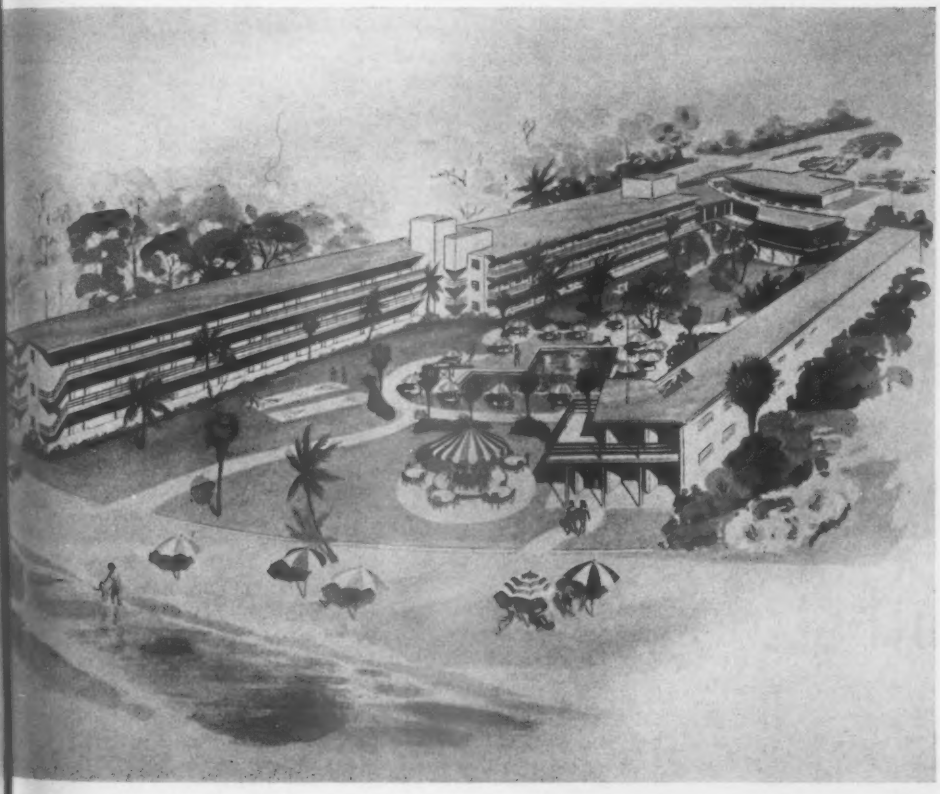
Knitting: Each contestant must produce a jacket which she has knitted from the packet of yarn and instructions given her when she was selected state winner.

Other competitions outside the homemaking field will be a DeSoto safe driving quiz, and a quiz on family savings. The latter is sponsored by the United States Treasury Department, Savings Bond Division, a new contest sponsor.

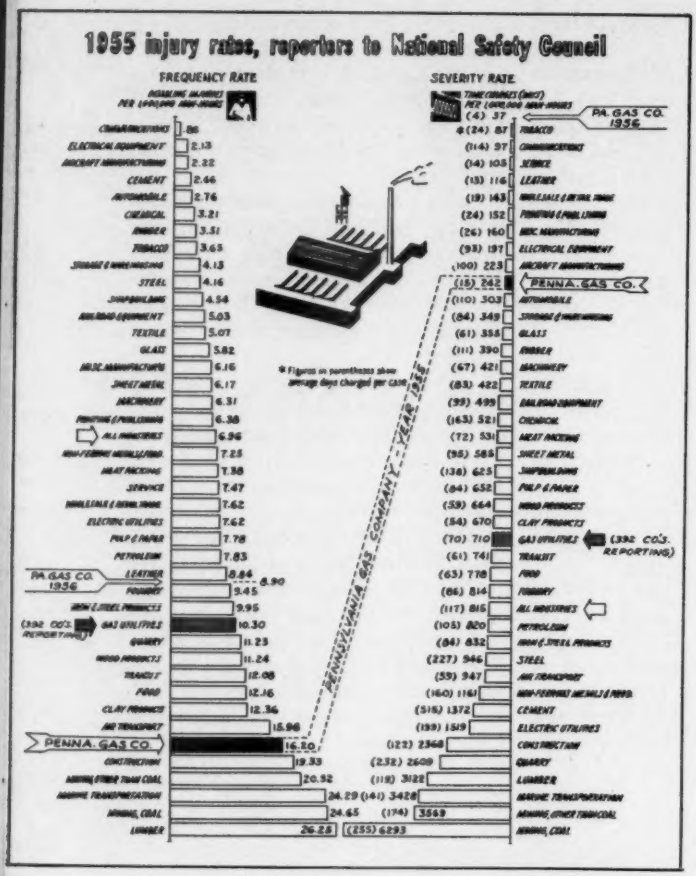
Joining the gas industry in the Mrs. America promotion this year, in addition to the U. S. government itself, are many solid business firms of a very high caliber, including some giants of American industry.

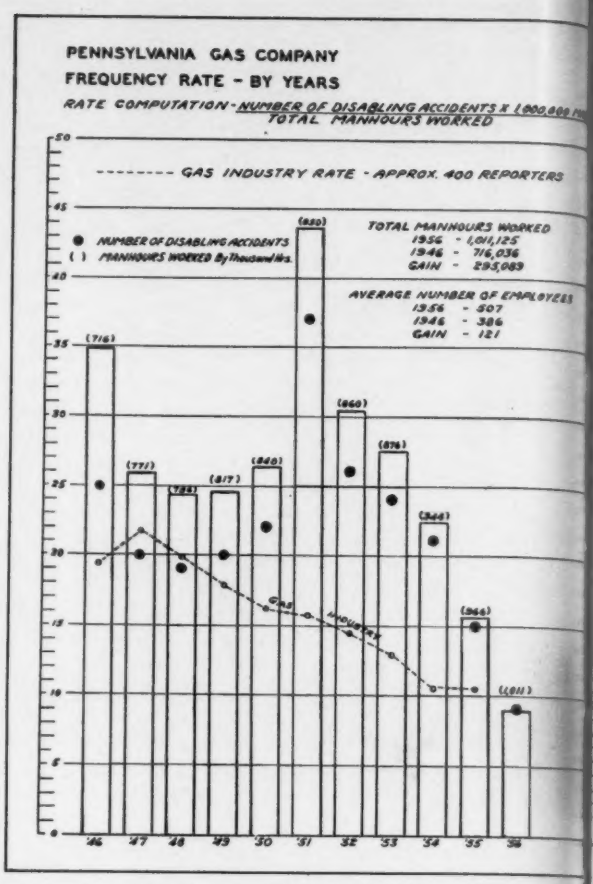
These additions are another result of A. G. A. taking over control of the contest. The Association actively sought sponsors who would really help the gas companies to conduct contests, who would add prestige to the promotion at the national level, and with whom the gas industry would be proud to be associated.

(Continued on page 44)



Mrs. America contestants and their husbands will be housed in this luxurious setting—Fort Lauderdale's Beach Club Hotel


1955 injury rates, reporters to National Safety Council
FREQUENCY RATE
SEVERITY RATE
PA. GAS CO. 1956
PENNA. GAS CO.
(392 CO'S. REPORTING)
PENNSYLVANIA GAS COMPANY - YEAR 1955


PENNSYLVANIA GAS COMPANY
FREQUENCY RATE - BY YEARS
RATE COMPUTATION - NUMBER OF DISABLING ACCIDENTS X 1,000,000
TOTAL MANHOURS WORKED
GAS INDUSTRY RATE - APPROX. 400 REPORTERS
NUMBER OF DISABLING ACCIDENTS
( ) MANHOURS WORKED By Thousand Hrs.
TOTAL MANHOURS WORKED
1956 - 1,011,125
1946 - 716,036
GAIN - 295,089
AVERAGE NUMBER OF EMPLOYEES
1956 - 507
1946 - 386
GAIN - 121
'46 '47 '48 '49 '50 '51 '52 '53 '54 '55 '56

Charts show accident experience of Pennsylvania Gas Company in relation to other industries and gas industry as whole

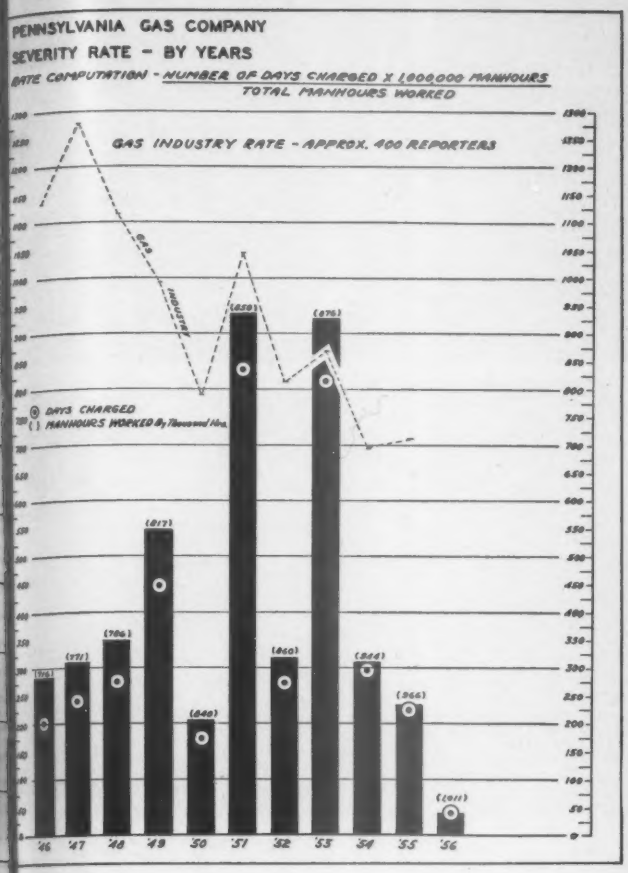
Pennsylvania Gas credits A.G.A. Accident Prevention course for guidance in plan that sharply reduced frequency rate

A safety program for a medium-sized utility

A safety program that evolved directly from A. G. A.'s two-day course, "Accident Prevention Through Informed Supervision," is now in its second year at Pennsylvania Gas Company. The results have already earned the company its first Accident Prevention Award for reducing its accident frequency rate 29 per cent.

In 1956, the first full year under the program, the frequency rate dropped 40 per cent, and the company looks forward to another award.

This excellent showing is not only a source of pride to the company management and personnel, but should be equally gratifying to those hard-working members of the A. G. A. Accident Prevention Committee who act as instructors during the strenuous two-day courses. Pennsylvania Gas Company's program is a direct result of one of these "schools" and it is built on the principles and examples set forth therein.



President D. E. Conaway (right) and Vice-president N. B. Donovan (left) are always available for consultation with M. A. Peterson, chief engineer and safety coordinator. Management has given full support since plan's inception

These six men, shown at A. G. A. Accident Prevention course held in Pittsburgh, December 1954, were responsible for formulating and initiating formal safety program. These men, plus one other, now form Central Safety Committee

As Milton A. Peterson, chief engineer and now safety coordinator, says, "The whole thing simply unfolded before our very eyes." He gives unstinting credit to the information, inspiration and mass of material supplied by the course, and now being utilized by his company.

Mr. Peterson was one of six Pennsylvania Gas men who attended the accident prevention course given by A. G. A. and the Pennsylvania Natural Gas Men's Association in Pittsburgh, Dec. 1-2, 1954. These six men, plus one other, now constitute Pennsylvania Gas' Central Safety Committee. Since then, a second group has attended the same course given in Potato City last November.

The original group was sent to Pittsburgh with the specific assignment to bring back a safety program. They were sent by W. H. Locke, then president of Pennsylvania Gas Company and now president of the parent company, National Fuel Gas.

Pennsylvania Gas has more than 500 employees engaged in all phases of gas utility operation—production, storage, compressing, transmission and distribution. Principal distribution outlets are Erie, Pa., Jamestown, N. Y., Corry, Pa., and Warren, Pa., where the general offices are located. Some 80,000 customers are served.

Also under the supervision of the general offices in Warren are the Jefferson County Gas Company and the Pennsylvania Oil Company. The group of companies operates over 2,000 miles of mains, 1,250 wells and seven compressor stations. These varied operations are carried out at 16 major work points located in an area that spreads from Erie (65 miles northwest from Warren) to Sigel (45 miles south of Warren).

The company has always been keenly aware of its safety obligations, both to its employees and to the public. Nothing in its past record gave cause for alarm—in fact, the record could be understandable cause for complacency. But management was convinced that a good safety record could be made better under the stimulus of a formal program, intelligently conceived and executed.

The accident prevention program was not initiated with the idea of achieving any spectacular gains over night. Rather, it was thought of primarily as another management step to promote better relations all down the line.

In the words of President Donald E. Conaway, "Safety is largely a matter of thinking of yourself and the other fellow when you're doing a job. If this thoughtfulness becomes second nature while working, the company will be not only a safer, but a more pleasant place to work. And if our men think of the welfare of each other while working, they are also

Jamestown workers are instructed in safe operation of boring tool by H. A. Foster, distribution foreman and member of Central Safety group

A. G. A. award is presented to B. H. Jay, a dispatcher at Warren mixing plant, in one of 16 such presentations made by President Conaway

likely to think just as naturally of the welfare of our customers."

The enthusiastic acceptance of the accident prevention program by practically all of Pennsylvania Gas' employees speaks well for this philosophy of employee relations—and for the success of the Central Safety Committee in engendering this enthusiasm.

We've said above that the genesis of the program came from the A. G. A. Accident Prevention course. Let's see how well the original six men learned their lessons—how they applied the principles drilled into them at Pittsburgh when they returned home to Warren.

Management leadership is a cardinal point. No accident prevention program, they were told, can reach maximum effectiveness without the unflagging active support of top management.

Initial interest was evidenced by the decision to start a program. In order to demonstrate top management's concern, the program was announced in an individual letter sent to the home of each employee. President Locke signed this letter.

Some preliminary education was done before the formal program began. Officers and supervisors of the company were given a one-day safety course, modeled on the A. G. A. course. Union officers and representatives were thoroughly briefed on the safety program in advance, and the union's endorsement obtained.

Each month a running report of lost-time accidents is posted on all employee bulletin boards. President Conaway signs these reports.

In the fall of 1955, N. B. Donovan, vice-president, attended safety meetings held at 16 work points. He addressed the groups on "Management Looks at Safety."

In the fall of 1956, President Conaway attended meetings at the same 16 work points, this time to present the A. G. A. Accident Prevention Award (duplicates of this certificate were made up so that each safety group had its own tangible evidence of work well done).

Management provides the time for the Central Safety Committee to prepare and present its monthly safety programs, and provides safety equipment needed on the job. Membership is maintained in the National Safety Council, which provides a source for materials and ideas.

Finally, top management is always available for consultation. Coordinator Peterson reports directly to President Conaway at least once a month.

Assignment of responsibility is an important step in setting up a program. At Pennsylvania Gas, each supervisor had been responsible for promoting his own safety program. The individual supervisor is still a key figure, but responsibility has been coordinated through the Central Safety Committee.

The importance of this committee is indicated by the caliber of its members. Chief Engineer Peterson is chairman and coordinator. Other members are Merle F. Sample, distribution superintendent; Archie F. Brown, transmission superintendent; James F. Donaghy, production superintendent; John M. Brown, assistant distribution superintendent; Leroy S. Thompson, Erie customer service foreman; and Harold A. Foster, foreman, Jamestown (N. Y.) distribution division.

Primary administrative responsibility falls on Mr. Peterson. He directs all safety activities, studies and compiles all accident reports, and coordinates activities of the committee with management.

Safety training at the employee level is carried out through monthly meetings held throughout the company territory. By combining some groups, a minimum of nine meetings is held each month. The total increases to 12 each month when office employees are also included.

Each meeting lasts at least one hour, and is conducted on company time, usually at the beginning or end of a workday. Whenever work schedules permit, the operating superintendent attends and takes an active part. At least one member of the Central Safety Committee is in attendance.

Training films, graphs, charts and illustrated talks are part of the training. Instruction is given in proper use of tools and equipment, and in artificial respiration and the use of gas masks and inhalators.

Maintenance of safe working conditions is a continuing part of the program. Employees are urged to make suggestions to improve safe working conditions and supervisors are instructed to act upon their suggestions quickly. Many changes can be made on the supervisor's own initiative; others are referred to the Central Safety Committee for a ruling either from it or top management.

Good housekeeping, proper lighting, good tools and equipment, proper storage of dangerous liquids, fire protection, etc., are the responsibility of the supervisor. These subjects, however, are frequently topics at safety meetings, and are discussed by the local safety committees.

At the present time, no regular inspection is conducted by the Central Safety Committee. However, each year officers of the company, plus key supervisory personnel, tour all Pennsylvania Gas properties. Also one or two men are assigned to check for all unsafe conditions.

All compressor stations are now following the American Standard, "Painting for Safety." Uniform painting plans are being carried out as equipment needs repainting.

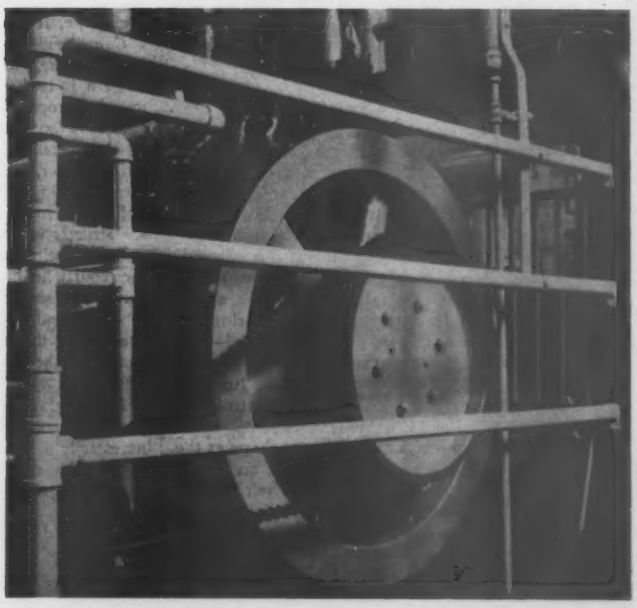
Accident reports originate at the work point, with the employee giving the necessary information. The supervisor in charge then signs this report, which is reviewed by the superintendent, the vice-president, and the chairman of the safety committee. This report is then sent to the accounting officer for entry into the permanent accident file. All compensation

(Continued on page 45)

...al Roystone Compressor Sta... their own suggestions as ...se of electric drill is demon... Films, illustrated talks also ...afety message to fore

... Conaway brings copy of ... workers at Corry shop. ... of meetings took a week's ... underlined management's ...ion of safety improvement

(Left) Projecting tube is striped yellow and black, according to "Painting for Safety" code. Note arrow pointing to fire extinguisher, guarded and brightly painted stairway. Guard (below) is painted bright yellow, while flywheel, though enclosed, is painted regulation red. Scenes are from compressor station at Roystone



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons
Assistant to the Personnel Manager
Philadelphia Electric Company

● **The investment club**—The latest employee club interest is the investment club. One such club is Franklin Associates, made up mostly of employees of Seiberling Rubber Company, Barberton, Ohio. Members put $10 per month into a pool for investment in common stocks. Benefits to club members are two-fold: (1) possible profits from dividends and stock appreciation, and (2) self-education in investment know-how.

As of now, the Security Exchange Commission has not frowned on this activity. But as a self-protection, it might be one employee activity from which you will want to divorce your company—as Seiberling does.

● **Age of technicians**—Need any prodding to get in the search for engineering and technical personnel? Here is what a Du Pont Company survey shows: Of its 100,000 employees, one in ten now holds a technical degree. In 1940 the ratio was only one to 15.

Still more indicative of the better jobs produced by advancing technology, one out of seven Du Pont employees now are college graduates. Of people at or above the plant manager level, only one in seven does not have a college degree of some kind.

If you ever question the power of a good reputation, consider the fact that 27 per cent of the technical graduates hired by Du Pont last year were people who simply wrote in or applied in person.

● **The card that's a guard**—With this new security system called "Card Key," your building will be as safe as a bank—both inside and out. It is simple, air-tight, and inexpensive. Slip the right card into the right slot—and open the lock. That's how this brand-new plant protection system works. All you see is a slot in a small wall plate. Behind that plate is an electro-magnetic scanner that takes a fast look at the card when it is slipped into the slot, responds favorably to the right card—and only the right card—by sending out an electrical impulse that opens the lock. Just like a buzzer or any other remote control system.

Cards are the same size, same shape as the familiar ID (identification) card, and made of plastic-sealed cardboard. Their secret: minute metal particles (not visible, not even big enough to feel) arranged in a pattern in the business end of the card. The pattern will activate a scanner set for that pattern only. Nobody except the maker (Card Key Systems, Inc., Burbank, Calif.) knows the pattern.

Those who use it like it. They consider it safer than a conventional lock-and key system. It is now replacing guards in many plants in the Los Angeles area. It is being used for perimeter access and for access to closed (secret) areas. It has proved to be:

Foolproof. Anybody can take a key to the nearest locksmith and get a duplicate. But not these cards. To duplicate them is a highly technical (and secret) matter.

Convenient. No clumsy bunch of keys to bother with.

Easy to change. If cards get mixed up or lost, the secret electronic combination can be changed quickly, old cards taken up, new ones issued. About a million combinations are possible—enough to guarantee an exclusive code to any plant.

Adaptable. Suitable not only for doors but even for the parking lot—or turnstiles.

Inexpensive. Locks are rented (not sold) at $10 a month, with a supply of cards to start with. A lot cheaper than plant guards.

● **Court decisions**—*Employer penalized for rewarding nonstrikers*—If an employer wishes to give loyal employees seniority preference over those who go out or remain on strike, the time for him to do so is while the strike is in progress. After the strike, it is too late, according to the 4th CA (Olin Mathieson Chemical Corp. v. NLRB).

The court's action backs up an NLRB decision that an employer unlawfully gave nonstrikers superseniority (seniority preference) pursuant to a policy adopted after the strike was over. The court indicated that, if the policy had been adopted during the strike, it would have been lawful.

Court's ruling—The 4th CA held that during a strike, when an employer's primary concern is to keep his plant in operation, it may be proper for him to offer permanent tenure or superseniority in order to obtain replacements. But, the court said, "When the strike is over, when the plant is in operation, then the imposition of the superseniority policy in favor of the replacements and against the strikers is quite a different matter."

By adopting the policy after the strike, the court held, the employer was clearly penalizing strikers for exercising their right to strike and thereby was discouraging any exercise of this right in the future. This, it concluded, he could not lawfully do.

Looking ahead in labor—When the Supreme Court makes decisions, they are not necessarily the last word on the subject. Often the rulings are not cut-and-dried. Take two decisions on employer responsibility in bargaining made at the last session. In one, the justices held that management must bargain with unions on the terms of stock purchase plans for employees. In the second, an employer was ordered to disclose his financial records to support a collective bargaining stand that he could not afford to grant a union's demand.

But in both instances, the Supreme Court pointedly said the decisions applied only to the cases in point. We must understand these qualifications to avoid running into legal setbacks. Stock purchase plans are not necessarily subject to bargaining—unless set up as part of compensation. And management may be able to avoid opening its books when bargaining, depending on how the counter-argument to the union is phrased.

Can employers curb union's internal discipline?—Just how far can an employer go when he feels his workers are being treated unfairly by their union? If the union indulges in retaliatory action against its members who disregard a strike and cross a picket line, may the employer use his efforts to ward off this action? The answer to this question was partly clarified by a recent New York court decision which held that unions could be denied their traditional right to discipline members if the strike agreement prohibited post-strike reprisals (Republic Aviation v. Republic Lodge No. 1987, I.A.M.).

At the outset of a strike at an aviation plant, the company announced that its gates would be open to any employee who chose to continue on the job. Many took advantage of this offer despite union threats and violence which were finally halted by court order. Before the strike was settled some months later, the company insisted that the settlement agreement ban both union and company reprisals against workers for their part in the strike. This included strikers guilty of criminal violence against the company and its property as well as those employees who worked during the strike. The company won its point and the following paragraph was included in a letter of agreement which was part of the strike settlement:

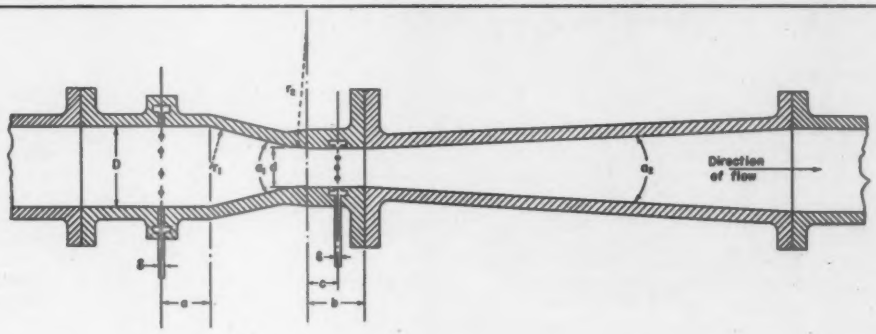
"The Company and the Union, its officers, agents, and members, agree not to engage in any acts of reprisal or any disciplinary action against any employee for any acts or conduct engaged in during the strike. In the event any employee has been or may hereafter be convicted in any criminal case arising out of activity in connection with the strike, it shall not be grounds for disciplinary action."

Shortly after the settlement of the strike, the union proceeded to compile the names of those who worked during the strike period and summoned them to trial to answer formal charges of conduct unbecoming union members. The company thereupon obtained an injunction restraining the union from engaging in acts of reprisal for employee conduct during the strike.

The union sought justification in its attempts to pass judgment on members who refused to abide by the strike order in the

(Continued on page 29)

Seek flow measurement standard



D = Pipe diameter inlet and outlet
d = Throat diameter as required
a = 0.25D to 0.75D for 4" ≤ D ≤ 6", 0.25D to 0.50D for 6" < D ≤ 32"
b = d
c = d/2
S = 3/16 in. to 1/2 in. according to D. Annular pressure chamber with at least 4 piezometer vents
r_2 = 3.5d to 3.75d
r_1 = 0 to 0.375D
α_1 = 21° ± 2°
α_2 = 5° to 15°

Fig. 1

Proportions of Herschel-type Venturi tubes recommended by the Committee on Flow Measurement of the International Standards Organization

International agreement on acceptable methods of fluid measurement was brought a step nearer to realization in a meeting of Technical Committee No. 30 of the International Organization for Standardization on July 12-14, 1956, in Munich, Germany.

The United States delegation, appointed by the American Standards Association, was headed by Howard S. Bean of the National Bureau of Standards, Washington, D. C. Other U. S. delegates in attendance were Dr. Andre L. Jorissen of Cornell University, Ithaca, N. Y.; Professor Samuel R. Beitler of Ohio State University, Columbus, Ohio; and Roland O. Cox of the Lone Star Gas Co., Dallas, Texas.

Delegates from ten countries were present, as follows: Germany, five delegates; Belgium, three; United States, four; France, seven; India, seven; Italy, three; Holland, two; Great Britain, eight; Russia, two; and Czechoslovakia, one.

M. Barillon, a noted French engineer, presided as chairman of the committee. Following is a summary of actions taken at the meeting.

Subcommittee No. 1 had met on July 9-11 and its report was presented on July 12. This subcommittee's work covers the preparing of rules and methods for the measurement of liquid flow in open channels and waterways. The group recommended the modification of its scope to include dilution methods, both chemical and radioactive. Three working groups were set up to revise the draft proposals in the light of the discussion in the subcommittee meetings and to present them for consideration at its next meeting.

This subcommittee tentatively decided that its next meeting would be held in the United Kingdom in 1958. Its report was approved by the main committee.

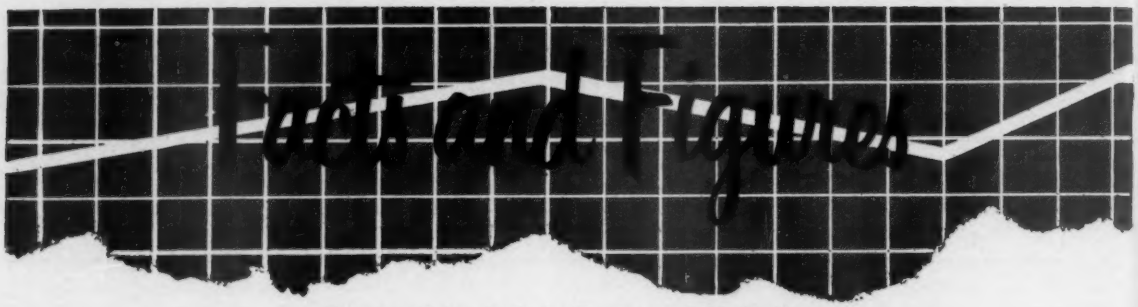
The main business of the meeting was consideration of the second draft of a proposed international standard or code for the measurement of fluid flow by means of orifice plates, nozzles or venturi tubes. The draft, a very thorough document, was prepared by Messrs. A. Schlag, a Belgian professor, and J. Stoltz, a French engineer.

The committee approved the following conclusions of Working Group No. 1 on venturi tubes:

1. For highly polished venturi tubes in smooth pipes, experimental evidence shows that the coefficient of discharge C may be slightly higher, equal to or slightly lower than unity.

2. For venturi tubes of commercial characteristics with the converging cone made of clean cast iron or steel installed in commercial pipes, the coefficient of

(Continued on page 47)



Prepared by A. G. A Bureau of Statistics

The continued decline in housing starts has had a most unwholesome effect upon manufacturers' shipments of gas appliances during 1956. Housing starts of 80,000 units during November declined 10.3 per cent from the year before, when 89,200 units were started. The U.S. Department of Labor reported that home building starts for December of 64,000 units were down 16 per cent from the year before. During 1956, 1,120,000 homes were started, as compared with 1,328,900 units started during 1955.

Shipments of all major gas appliances during December were off from a year ago. Automatic gas water heater shipments during December totaled 166,100 units, down 10.4 per cent from the 185,400 units shipped December 1955. Total 1956 shipments were a record 2,773,600 units, almost one per cent higher than the previous year.

Gas range shipments excluding built-ins totaled 118,700 units, the smallest number shipped since July 1955, and 22.7 per cent below the shipments made during December 1955. During all of 1956, gas range shipments of 2,008,400 units fell 11.4 per cent from the 2,266,600 units shipped during 1955.

Shipments of 52,700 gas-fired central heating units during December were off 21.5 per cent from the year before. During this same period, oil-fired burner installations were estimated at 44,607, down 19.6 per cent from the 55,481 installations made December 1955. Total shipments of gas-fired central heating equipment during 1956 were 1,081,200 units, down 4.7 per cent from 1955. Oil burner installations for the year totaled 719,289 units, down 14.6 per cent from 1955.

Automatic gas clothes dryer shipments during November 1956 totaled 47,250 units, down 6.1 per cent from the year before. Electric dryer shipments during

(Continued on page 26)

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING DECEMBER 1956

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	December 1956		November 1956		Eleven Months Ending November 1956	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES						
Gas	118,700	—22.7	149,700	—18.8	1,889,700	—10.6
Electric	n.a.	n.a.	90,200	— 5.3	1,162,900	— 8.5
WATER HEATERS						
Gas	166,100p	—10.4	186,600	— 4.6	2,607,500	+ 1.7
Electric	n.a.	n.a.	52,100	+ 5.3	784,300	— 6.9
GAS HEATING						
Furnaces	42,900p	—18.9	55,100p	—28.8	810,500	—28.8
Boilers	4,100p	—18.0	8,100	+ 1.3	99,800	+ 1.3
Conversion Burners	5,700p	—38.0	11,600	—42.3	193,000	—42.3
DRYERS						
Gas	n.a.	n.a.	47,250	— 6.1	392,450	+20.4
Electric	n.a.	n.a.	123,300	+15.4	1,046,300	+16.7

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING NOVEMBER 1956

(MILLIONS OF THERMS)

	1956	1955	Per Cent Change
Month of November			
All types of Gas	5,832.8	5,690.5	+ 2.5
Natural Gas	5,641.9	5,407.9	+ 4.3
Other Gases	190.9	282.6	—32.4
Twelve Months Ending November 30			
All types of Gas	71,969.4	66,043.3	+ 9.0
Natural Gas	68,561.1	62,581.9	+ 9.6
Other Gases	3,408.3	3,461.4	— 1.5
November Index of Monthly Utility Gas Sales (1947-1949 = 100)	215.1	209.8	+ 2.5

PERTINENT BUSINESS INDICATORS, NOVEMBER

(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	November			October		
	1956	1955	Per Cent Change	1956	1955	Per Cent Change
Industrial activity (1947-49 = 100)	147p	143	+ 2.8	146	143	+ 2.1
Consumer prices (1947-49 = 100)	117.8	115.0	+ 2.4	117.7	114.9	+ 2.4
Housing starts, Non-farm (thousands)	80.0	89.2	—10.3	93.0	105.8	—12.1
New private construction expenditures ($ million)	2,650	2,663	— 0.5	2,751	2,810	— 2.1
Construction costs (1947-49 = 100)	155.4	148.6	+ 4.6	155.4	148.6	+ 4.6

n.a. Not Available.
p. Preliminary.

How to keep tabs on new housing

By BUREAU OF STATISTICS
American Gas Association

The task of a utility market researcher in gathering current data on new residential building in his area is fourfold. First, it is necessary to determine the number of new homes; second, to pin-point their location; third, to classify them according to their characteristics; finally, to keep records on the equipment installed in them.

Of all sources of information, perhaps the most readily accessible and generally available is a listing of local building permits issued. Communities may differ from one another in the kind of detail required for building permit applications, but every permit will specify the number and location of dwelling units it covers.

Circumstances will determine the best way to transfer data from the permits to company records in a form to be used to implement sales effort and marketing decisions. If the permits are a matter of public record, perhaps the most reliable procedure is to copy the relevant information on to prepared work sheet forms. This should be done at frequent, regular intervals—semi-weekly, once a week, or bi-weekly, depending upon the volume of building permit activity. An interval longer than two weeks is never recommended since some of the information may then become dated before it can be used.

Discreet inquiry may reveal that other community organizations also gather the same information from the same source —newspapers, savings and loan associations, real estate board, private real estate agents, Chamber of Commerce, or building supplies distributors. A cooperative arrangement may be set up to minimize the work load. In some larger cities, service agencies may exist that compile these data.

Where permits or permit applications are not open to public inspection, or where other considerations make it impractical for company personnel to transcribe the data, it is usually possible to have it done by city employees. Generally, there will be a fee for a regular service of this kind, but again, a sharing agreement may be reached with other interested organizations.

The most important advantage of building permit data in many areas is immediacy. The information can be tabulated, analyzed, circulated to various com-

This article is a digest of a study made by the Bureau of Statistics entitled, "Measuring the New Housing Market." The complete paper is available upon request to the Bureau.

pany departments, and acted upon while the new homes are still in the planning or early construction stages. A further advantage is that they provide high coverage, at least for certain classes of new building within city limits, and at relatively modest cost.

Building permit data do have certain limitations. Primarily, permits apply only to buildings within certain political divisions, usually city limits. They may fail to cover certain classes of residential construction even within the city—conversion of commercial buildings to residential use, partition of existing dwelling units, public housing, Wherry Act housing. Furthermore, some of the building permits issued are never used.

In some cities, building permit regulations are only laxly enforced. At times, applications are not filed, and permits are not formally granted until the buildings they cover are well under construction.

In still other places, leading builders plan and order equipment for the homes they intend to build shortly after the acquisition of the necessary land, which is generally about eight or nine months before construction starts, and usually before the permits are issued.

A final drawback is the attitude of obstructionism sometimes encountered among public officials. This difficulty probably does not exist often, but it may prove an insuperable obstacle.

Often it is necessary to turn to secondary sources. F. W. Dodge Corporation provides the most widely used service sending out bulletins on construction bids called for, construction contracts awarded, and other building activity for given areas. Bulletins may arrive daily in some busy areas, and should be processed immediately—located on a map of the company service area, tabulated, and circulated to appropriate departments. Prompt editing of the reports is important since

(Continued on page 44)

Regional restaurant show held at capital

The East-South Regional Restaurant Exposition was held for three days in December at the Sheraton-Park Hotel in Washington, D. C. Some 7,500 visitors saw many attractive exhibits of equipment and products pertinent to the restaurant field.

Of particular interest was the giant commercial gas cooking equipment exhibit sponsored by the Washington Gas Light Company. Eleven cooperating manufacturers showed their latest heavy duty appliances. Four of them had live demonstrations, which always attract more than the usual number of visitors into an area.

The gas exhibit was at the end of the main aisle directly in front of the only entrance to the hall. A large sign in such a position that it could be seen from every point reminded everyone at the show that gas is surely the accepted fuel for volume cooking.

The live demonstrations were a focal point for visitors. For the entire three days of the show the area under the Blue Flame Banner was always crowded. At one demonstration, General Mills furnished a baker and materials for products which were continuously being prepared in a Martin oven.

Also offered to visitors were Ipswich clams fried in a Keating fryer, and hamburgers broiled on an Ember-Glo broiler. Both of these live exhibits had a Pledgaire ventilator in operation over them.

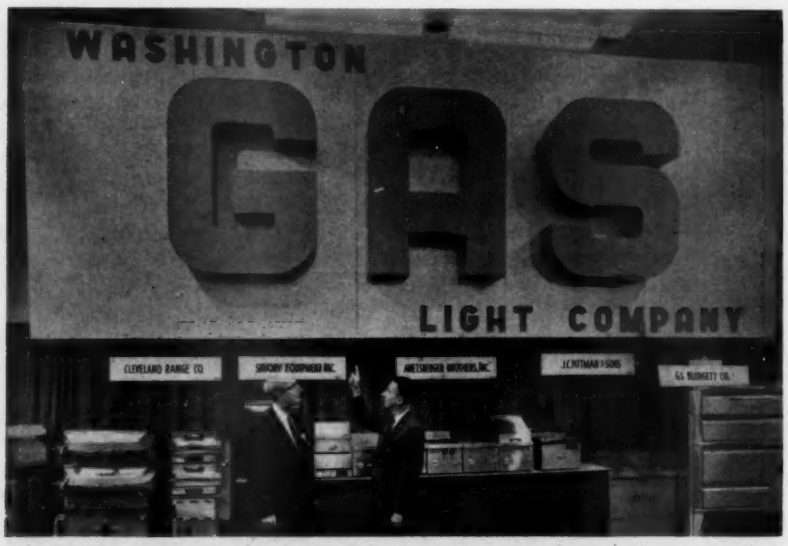
The local A. O. Smith Corporation distributor furnished a two-temperature water heating installation from which two streams of water, one at 180 deg. F. and one at 140 deg. F., flowed continuously.

Those cooperating in this large gas exhibit were: Anetsberger Brothers, Inc., complete counter appliance line; The G. S. Blodgett Company, Inc., baking and roasting ovens; Cleveland Range Co., steamers; Frying Equipment and Supply Co., Keating fryers; Magic Chef, Inc., ranges, ovens, broilers and fryers; Martin Oven Co., baking and roasting ovens.

Also, Mid-Continent Metal Products Co., Ember-Glo broilers; J. C. Pitman & Sons, Inc., fryers; Savory Equipment, Inc., toasters; A. O. Smith Corp., water heaters; Garland Div., Welbilt Corp., ranges, broilers, ovens and fryers.

These regional restaurant expositions afford the opportunity for those in the restaurant business who cannot visit the national shows to see the latest equipment available. They also provide a common meeting ground for restaurant operators, manufacturers and commercial gas men. Prospects and customers can be reached on a local level which is not possible without the facilities offered in a trade exposition.

Many favorable comments were heard from the exhibitors in the gas area. Over two dozen major appliances were sold during the three-day period of the show.



Huge sign dominating East-South Regional Restaurant Exposition at Washington, D. C., is viewed by E. V. Fineran (left), and W. H. Loving, both of Washington Gas Light Co.

Program set for management meeting

Section Chairman L. A. Brandt will preside over Conference general sessions

Delegates will be welcomed by R. A. Puryear, Southern Gas Association president

T. C. Kammholz, former NLRB general counsel, will discuss the labor scene

Challenging and informative discussions on a wide range of topics are on the program of the 1957 General Management Section Conference, to be held March 25-27 at the Edgewater Gulf Hotel, Edgewater Park, Mississippi.

Among the prominent speakers listed are Theophil C. Kammholz, former general counsel of the National Labor Relations Board; James E. Day, president of the Midwest Stock Exchange; Dr. Watrous H. Irons, president of the Federal Reserve Bank of Dallas; and Louis A. Allen, of the consulting firm Booz, Allen and Hamilton.

In addition to the general sessions, meetings for more specialized groups will be held by the Purchasing and Stores Committee, the Insurance Committee and the Personnel Committee. The program for the general sessions was planned by the Section's Arrangements Committee, headed by J. H. Wimberly, executive vice-president, Houston Natural Gas Corporation.

The conference delegates will be welcomed by Richard Puryear Jr., president of the Southern Gas Association.

Mr. Allen will address the first general session on new concepts in management and organization. Conventional ideas about management are being critically examined, and now emerging is a picture of an integrated science of management. Mr. Allen will discuss this new thinking in the light of a three-year, nationwide study he recently completed.

Dr. Irons will discuss the highlights of the economic situation during the first quarter of 1957 and will comment upon the outlook for the rest of the year.

Dr. Irons, who has a broad academic background and is the author of several books on economic and business subjects, has been associated with the Federal Reserve since 1945.

Zachry to speak

The luncheon session will hear from Clare H. Zachry, A. G. A. president, in a talk that will suggest the gas industry's place among the other great industries on the American scene.

The Monday afternoon session will lead off with Alexander M. Beebee, chairman of the board, Rochester Gas and Electric Corp., in a talk entitled, "Safety —A Powerful Tool in Management's Major Problems." He will point out the intimate relationship of public and employee relations with the safety record that a company establishes. An engineering graduate of Cornell, Mr. Beebee has held many important positions in A. G. A., has lectured and directed research at educational institutions, and has done consulting work in many parts of the U. S. and Canada.

Ira H. Cram, senior vice-president, Continental Oil Co., Houston, will review activity in off-shore exploration and development, and give the outlook for the future. He will include a forecast of the rate of growth of reserves and the ultimate availability of gas from these off-shore "prime hunting grounds." Mr. Cram is regarded as one of the nation's outstanding petroleum geologists.

Tuesday's general session will open with Mr. Kammholz' talk, entitled "The 1957 Labor-Management Scene—And a Look Ahead." The former NLRB official will analyze the government's part in labor-management relations under the Wagner and Taft-Hartley Acts. He will also make some observations on the government's changing role in this field.

Mr. Kammholz joined the Chicago regional office of the National War Labor Board in 1943. After the war, he returned to private practice, largely in the labor field, until he became general coun-

sel for the NLRB in 1955. He resigned to join the legal firm of Vedder, Price, Kaufman & Kammholz.

Conferees will then hear from Mr. Day on "Stockholder Relations." These relations are becoming more and more important, not only as they affect the management and structure of a company, but also because of their impact upon the need of industry generally for more capital. Mr. Day will review today's situation and suggest possible improvements.

Beginning his career in the public relations and general banking management fields, Mr. Day formed his own investment banking firm. As vice-president of the Chicago Stock Exchange, he conceived the idea of merging Midwest stock exchanges. In 1949 the stock exchanges of Cleveland, St. Louis, Minnesota, St. Paul and Chicago merged to form today's Midwest Stock Exchange.

During the luncheon session, management men will hear Charles E. Parker, president, Central Surveys, Inc., talk on the problem of municipal ownership. The title of Mr. Parker's talk, "Utility Employees Defeat Municipal Ownership," indicates his thesis. If informed, and motivated to use the information, utility employees can play a leading role in defeating the current trend toward municipal or other government ownership.

Mr. Parker's organization has specialized for 20 years in customer and employee attitude and research for utility companies. Many of these surveys have been studies of local elections, some of which concerned public ownership issues. These surveys indicate that an important factor in these local elections has been political effectiveness of local utility employees.

The Tuesday luncheon will conclude the general sessions, with open committee meetings, designed to disseminate information of their worthwhile activities and publications, to take over.

The Purchasing and Stores Committee will discuss four important topics of interest to specialists in their field. Traffic as a purchasing function will be discussed by an expert in the field. The speaker will suggest ways of controlling cost through traffic management and will discuss specific case histories of substantial savings. Fred E. Bethurum, sectional supervisor of stores, Lone Star Gas Co., will lead the discussion following this address.

Pipe storage methods will provide a springboard for discussion by a panel under the leadership of Harold E. Wade, general storekeeper, The Peoples Gas Light and Coke Company. Storekeepers and operating men are coming more and more to a realization that high pressure pipe, which is so susceptible to weakening through seemingly insignificant nicks and scratches, requires a high degree of skill in handling and storage. The storage of wrapped pipe with its susceptibility to puncture and consequent corrosion presents a similar problem. Purchasing and stores men stand to benefit by the experience of the panel members, all of whom are experts in this field.

Continuing on Wednesday morning, the group will hear John C. Sims, purchasing agent, The Brooklyn Union Gas Co., on "mark sense" for stores. Conferees will benefit from one company's experience with this machine method of handling stores records and from the guided discussion of the subject conducted by J. F. Quigley, assistant manager, stores department, Philadelphia Gas Works Div., U.G.I.

The final presentation will be a panel discussion entitled, "Loading Issued Material on Trucks," headed by H. D. Dusinberre, assistant purchasing agent, The Manufacturers Light and Heat Company. This panel will discuss whether the stores department or the truck crew loads issued materials on service trucks. The panel will also discuss the merits and demerits of night loading of this material.

On Tuesday afternoon, the Insurance Committee will present a discussion of fire insurance rate making by an outstanding insurance company executive. The relationship between loss control and insurance rates will be the topic of a leading insurance manager of the gas industry. The Insurance Committee plans to continue on Wednesday morning with a presentation on an important modern insurance and human relations problem —the extension of life and health insurance coverage to retired employees. A business meeting will be held after the open meeting, where the committee will hear reports of its standing project groups.

The Personnel Committee will also present a program on Tuesday afternoon. Current plans are for the invitation of an outstanding opinion researcher to speak on the subject of employee attitudes. The Personnel Committee will also have a business meeting to perfect plans for the release of several annual study reports.

Among committees of the Section who will hold business meetings during the conference are Accident Prevention, Gas Industry Finance and Economics, Financial Relations, Investor Communications, and Rate.

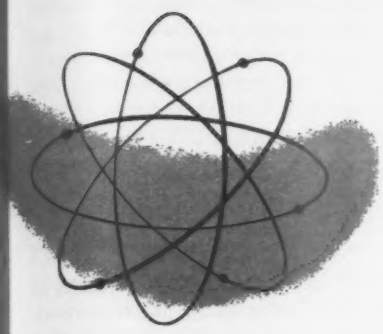
Facts and figures

(Continued from page 22)

the same month were up 15.4 per cent to a total of 123,300 units. A total of 392,450 gas dryers were shipped during the first eleven months of 1956, up 20.4 per cent over the comparable cumulative period of 1955. Electric dryer shipments showed an increase of 16.7 per cent in the same cumulative period.

Gas appliance data relate to manufacturers' shipments by the entire industry compiled by the Gas Appliance Manufacturers Association. Industry-wide electric appliance statistics are based on data compiled by the National Electrical Manufacturers Association and are reprinted by GAMA in its release. Data relating to oil-fired burner installations are compiled by *Fuel Oil and Oil Heat*. Data on both gas and electric dryer shipments are released regularly by the American Home Laundry Manufacturers Association.

Total sales of the gas utility and pipeline industry to ultimate consumers during November 1956 were 5,833 million therms, up 2.5 per cent over the 5,691 million therms sold November 1955. The relatively small percentage gain in sales can be attributed to the warmer weather experienced throughout most of the nation and to the relatively small increase in industrial sales of gas. Sales of gas to industrial users increased approximately 3.3 per cent over the November 1955 industrial sales. Industrial production, as measured by the Federal Reserve Board index was 147 (1947-1949=100), up 2.8 per cent over November 1955. The Association's November index of gas utility and pipeline sales is 215.1 (1947-1949=100). For the year ending Nov. 30, 1956 total utility and pipeline sales of gas were almost 72 billion therms, up 9.0 per cent over the 66.0 billion therms sold in the twelve-month period ending Nov. 30, 1955.



Report on electronics research

By EMMET T. WHITE

Chairman, Steering Committee
Electronics Research Project

The research project on electronic computing equipment by the Computation Laboratory at Harvard University is sponsored jointly by the American Gas Association and the Edison Electric Institute. The project, formally approved in May, 1955, is expected to take at least three years. Dr. Howard Aiken, director of the Computation Laboratory, is in charge of the project.

The objective of the research effort is to develop and evaluate potential designs for accounting equipment especially applicable to utility accounting procedures. The emphasis will be on automatic electronic machinery. It should be understood that Harvard will not construct any machines in this project.

A joint Institute and Association committee, called the Steering Committee, provides advisory assistance to Dr. Aiken and his staff. The Steering Committee meets periodically with the research staff to review progress, assist in outlining new avenues of investigation, and provide information concerning customer accounting and general accounting procedures.

Thus far, three progress reports have been submitted by the staff. Progress Reports Nos. 1 and 2 have been formally released by the Steering Committee with their comments to both the electric and gas associations. Progress Report No. 3 is now under review by the Steering Committee.

The results of the first three progress reports may be summarized in four major areas: standard flow charting symbols, programming techniques, storage devices and related access time, and an initial approach to a system design.

An effort was made to study the possibility of developing a standard set of flow charting symbols. Flow chart symbols are used to simplify the outlining of procedures and usually supplement written descriptions. The flow chart symbols are to the systems analyst (or programmer) what highway signs and symbols such as "stop," "caution," and "curve" are to the motorist. When properly used they present a quick, visual picture of operating procedures.

In reviewing some of the flow charts of present procedures and logical charts of contemplated computer procedures submitted by several utilities, the staff ran into the problem of symbol variation. The various types of chart language used by equipment manufacturers and companies made it difficult to compare different systems and procedures.

This resulted in an attempt to develop a standard set of flow chart symbols for universal use which would reflect the best features of the various systems under study. It is felt that a standard set of flow charting symbols would facilitate communications between the research staff and the industry, and among companies.

Several areas studied so far in the staff's utility accounting familiarization program have suggested possible mathematical techniques to simplify the programming of accounting procedures for existing computers. In one study, it is pointed out that the characteristics of a particular computer require the use of certain programming techniques to solve a problem that will differ with other computers. The use of these techniques will usually provide a saving of time, number of instructions or storage space, but unfortunately, not all three at the same time.

In developing and discussing several techniques related to accounting procedures, the study indicates the desirability of a new machine programming instruction to develop an inequality test and preserve either or both of the larger and smaller of numbers for subsequent processing.

A study of logical analysis charts, developed by utilities presently operating or planning the installation of computers, developed that our customer accounting operations require a large number of decisions during processing. This situation may not be obvious until you recall the intensive training required to instruct a new employee in how and when to recognize, make decisions and take appropriate action concerning different rates, various account conditions, consumptions for frequency analysis, electric or gas service, number of billing days and many other comparisons.

In an effort to simplify the computer programming of the complex decision pattern inherent in our accounting operation, several mathematical techniques have been devised to arrive at logical decisions. These techniques utilize the extensive arithmetic circuitry of present computers rather than the limited logical facilities available.

An investigation is being made of service use analyses to determine the possible use of statistical techniques to predict revenue changes with less effort and at lower cost. The objective of the study is

Excerpts from a paper presented at Accounting Section meeting, American Gas Association Convention, Atlantic City, N. J., October 15, 1956.

to develop methods of getting maximum utilization of the data for as long as possible after their collection, of sampling the total data available, and of reducing the amount of data processing, keeping in mind, of course, utility requirements.

The foregoing studies involve generally a thorough review of the arithmetic and decision problems inherent in customer accounting operations, all undertaken to gain a better understanding of the possibilities of mathematical approaches. These investigations have been worthwhile because present computers, designed originally for solving scientific problems provide fast computation and slow decision processes. These characteristics are just the reverse of what we think we need in a computer.

These mathematical techniques may be advantageous to the current users of computers. They could simplify certain routines which would reduce the amount of internal storage required and would speed up computer operation. In addition, they may suggest ideas for improved equipment design.

The research project so far has come up with two interesting reports on possible storage devices. The effort here is to look for economic electronic storage equipment which will hold all the information contained in our present accounts receivable files, and permit us to change and extract any data at least as quickly as we do it now.

One report provides an excellent background of information on the characteristics of such equipment. The other report suggests a potential application of a drum-type storage device.

The report on the use of immediate access storage devices for business records represents an exploration not so much into the nature of our problem as into the present and foreseeable development of equipment for fast access to large quantities of data. The mathematics and problems involved with immediate access devices are explored with considerable emphasis on the use of a proposed magnetic belt storage unit.

The volume of our files and the methods of record-keeping require some thought beyond the present storage use made of the magnetic drum and the magnetic core. The material in this report will furnish useful background in future studies of the use of immediate access devices to store customer accounting data.

A related look into the more foreseeable future was undertaken in a study on the use of a magnetic drum to process accounts receivable data. Assuming the use of a slow speed, high density drum, now undergoing commercial development, an accounts receivable procedure was visualized, storing limited data for approximately 200,000 accounts. While the size of the magnetic drum forces severe limitations on the amount of information to be stored, the application seems to have some potential.

A major result of these studies is the need for an intensive inquiry by representatives within our industry into the basic searchtime requirements for quick access to mechanized records. It is these speed requirements which tend to determine both the type and cost of large capacity, fast access storage devices. This study has been undertaken by the A. G. A. and EEI Customer Relations Committees.

As part of this program, an analysis is being made of the account information required for handling telephone inquiries from customers. It is suggested that telephone inquiries for account information possess three important characteristics which affect the customer accounting system.

Three characteristics

First, the time allowed for obtaining the necessary information appears narrowly restricted; second, telephone inquiries are received in random order; and finally, the volume of information which must be accessible for answering the telephone inquiries is large. Consequently, relatively fast random access is required to a large body of information.

In an effort to determine the types of inquiries, the information required to answer the inquiries, and other characteristics, a machine analysis of more than 1,500 customer calls is being made. The initial source of information for this analysis is a survey consisting of the transcripts of 3,378 calls to bookkeeping stations recorded by the Indianapolis Power and Light Company during a four-week period from May 16th to June 10th, 1955.

The objective of the analysis is to determine the frequencies with which various items of account information are required, and relate these frequencies where possible to the types of inquiries or to other characteristics of the calls. The results of this analysis will be presented in a subsequent report by the staff.

Two recent studies begin to reflect the staff's efforts to relate their knowledge of our accounting procedures and problems to potential electronic system design. The initial basic approach to the problem of data processing machine design considers a system designed to handle 50,000 accounts. The contemplated system will perform all the appropriate functions associated with customer accounting. To paraphrase a phrase, such a system might be termed a "unit computer plan" of accounting.

Other objectives under consideration in this initial approach are as follows:

1. Computing and logical operations to be separate from file maintenance operations, such as sorting, merging, and extracting.
2. A very simple computing unit.
3. Simplified programming to include the writing of instructions without address references.
4. Instructions to be stored with the account data to be processed.

Other studies made by the staff include account numbering systems for electronic accounting and the use of computers in management reporting. Consideration is being given to the design of an account numbering system for computer processing which simply, effectively and uniquely identifies each account. It is suggested that computer equipment characteristics are as important in selecting an account numbering system as are the characteristics of the accounting requirements.

Certain basic concepts of an electronic account number system have been established and related in their importance to several basic accounting operations such as sorting, file reference, and statistical reports. The study of an account numbering system and its problems for electronic accounting is important because of its very great effect on the economy of storage and speed of reference in any computer system.

A preliminary study has been made on the presentation of reports to management by electronically developed visual means, using analog rather than digital techniques. In simpler terms, this means displaying report data on a television screen in three-dimensional form. Whether this form of presentation might present reports to management more effectively is a matter which requires much more exploration and experimentation.

This summary has indicated the current status of the Harvard Research Project.

Progress has been made during this initial phase of educating the staff in our accounting operations. The staff is making an effort to insure that all aspects of the problem are thoroughly understood and related to existing computer components and their characteristics.

With an increasing awareness of our problem areas, it is expected that more conclusive design developments will soon be forthcoming in subsequent reports by the staff of the Harvard Research Project.

Someone has defined research as "the systematic examination of and experimentation with the known to discover the unknown." The discovery of the unknown may happen quickly by chance, or, as more frequently happens, after long, tedious investigations and study. As the project progresses, it is apparent that potential electronic solutions to our problems suggest themselves based on the staff's knowledge of and experience with computers and their design. It is from this background that new computer designs for our specific purpose may be developed.

Air conditioning

(Continued from page 8)

more engines start up or increase in speed until, at —20°F outside temperature, all engines will be running at maximum speed to supply the hot water requirements of the perimeter heating system.

Four deep wells were drilled to supply the water for the air conditioning system. Three wells were drilled down into the Jordan Stream, approximately 420 ft. Two of these wells are pumping wells while the third well is used for returning water to the stream after it has been used in the system. The fourth well is down about 130 ft. into a glacial drift.

This last well will be a storage well. Hot water from the heat pump will be sent down during the summer cooling months and will be pumped out for heating during the winter. The process of storing enough water and of raising the ground temperature of the storage area so that the water will remain hot will take approximately three years.

All of the water which is returned to the Jordan Stream is chemically purified before it is returned due to the close proximity of the Edina Village well. The temperature of the water pumped from the Jordan Stream is approximately 50°F.

The Minneapolis-Honeywell Regulator Company has designed and installed a sequencing and control system which will automatically control and sequence the entire air conditioning system. This system, through relays, time delay switches, interlocks, etc., starts, stops, or controls the speed of any or all of the natural gas engines. It will start or stop the ventilating fans, tenant area package units, or perimeter heating units. It controls the water flow, either hot or chilled, by the use of some 50 motorized valves in the equipment room which will allow approximately 110 combinations of flow and temperature.

A data reduction system has been designed and is being installed by Minneapolis-Honeywell Regulator Company which will record automatically on a transcriber operating hours, air and water temperatures at control points, engine operating temperatures, fuel and water consumption, etc. It will flash a warning signal to the security office if any portion of the machinery is not operating correctly, i.e. sticking dampers, low oil pressure, overheated engines or compressors, low water pressures, low or high refrigerant pressures, etc.

The transcriber for this data reduction system will be located in the security office in the basement level. This, in effect, will allow one man to control the entire mechanical operation of the Center.

Additional quick spot heat is needed at each entrance to the Center during cold weather. The entrances are of single glass wall construction. Gas-fired unit heaters, with separate thermostat controls, are placed at each entrance. Short duct work is installed in the ceiling above each door feeding a series of small nozzles which project a blanket of warm air down the entrance wall thereby preventing the infiltration of cold air into the conditioned space when the entrance doors are opened. The return air is picked up at the floor and returned to the unit heaters.

The Southdale Shopping Center is supplied with natural gas for operating the heat pump on an interruptible basis. If and when curtailment of the natural gas supply is necessary, the gas company will contact the security office in the Center by telephone and request that the heat pump engines be switched over to propane gas. During curtailment all engines will operate on propane gas. An 18,000 gallon supply of propane gas is maintained as standby fuel by the Center for this purpose.

Each engine has two gas supply lines, one for natural gas and one for propane gas. The lines to each engine are controlled by solenoid valves and one relay operates both valves. The relay, in the open position, holds the solenoid valve in the natural gas line open and the engines operate on natural gas. When the relay is closed, by a manually operated switch, it causes the solenoid valve in the natural gas line to close and the solenoid valve in the propane gas line to open. The engine is then operated with a mixture of propane gas and air.

In addition to the heat pump requirements, firm (non-interruptible) gas is supplied to all seven of the modern "all-gas" restaurants which serve the Center. Firm gas is also used by four tailor shops, one cleaner and dyer establishment, and the vestibule unit heaters.

Although the Donaldson store area is immediately adjacent to the Southdale Center, and is actually a part of it, it is separate insofar as heating and air conditioning is concerned.

The Southdale Regional Shopping Center was designed by Victor Gruen and Associates of Los Angeles. The air conditioning system was designed by David Berks, of that office.

Industrial relations

(Continued from page 20)

bylaws of the union constitution which directed its officers to try members accused of unbecoming conduct. But the union constitution cannot supersede the rights of the company as established by strike agreement especially since the terms of the union constitution are not binding on the company. The union had accepted the benefits of the strike settlement and it could not now evade its obligations.

Many observers feel that the internal affairs of the union are strictly its own business. As a matter of fact this company action is at least unusual if not unprecedented. But the employer feels that union disciplinary action against its members, in at least this instance, directly and adversely affects its best interests.

While no one denies the union's right to run its internal affairs without employer interference, it would seem that the union surrendered that right in the present case by signing the agreement not to engage in retaliation.

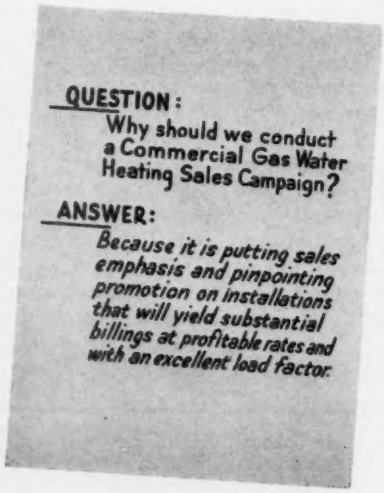
Member companies marshal forces for annual three-month campaign to tap profitable market for commercial equipment

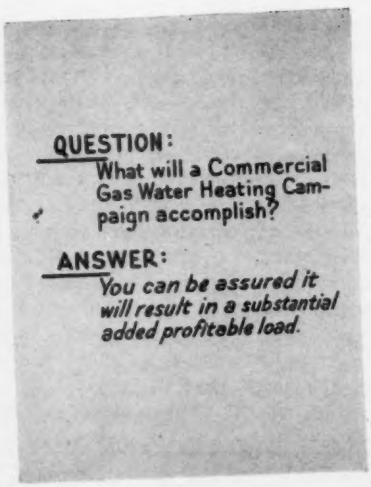
Open 1957 commercial water heating campaign

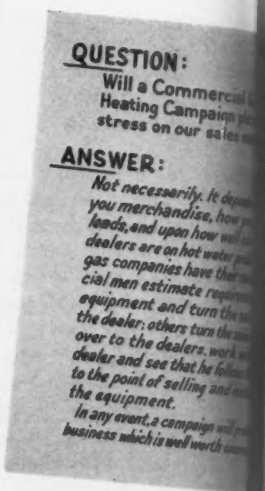
The gas industry will conduct the 1957 A. G. A. Commercial Gas Water Heating Sales Campaign during February, March and April. Already member companies are marshaling their forces to take advantage of the vast and profitable market potential offered by commercial water heating.

It is acknowledged that one commercial gas water heater sale can mean as much as 60 residential water heater sales. Hot water is a basic requirement in every food service establishment in order to meet standards set by the National Sanitation Foundation. These call for two-temperature water—140° wash water and 180° sanitizing rinse water—in adequate quantities at the point of use.

This opens the opportunity of promoting commercial gas sales and doing your customers a big favor by having them install properly-sized equipment for their hot water needs. A great many restaurants and other volume feeding locations still have either a residential type water heater, or one of inadequate


QUESTION:
Why should we conduct a Commercial Gas Water Heating Sales Campaign?
ANSWER:
Because it is putting sales emphasis and pinpointing promotion on installations that will yield substantial billings at profitable rates and with an excellent load factor.


QUESTION:
What will a Commercial Gas Water Heating Campaign accomplish?
ANSWER:
You can be assured it will result in a substantial added profitable load.



size which provides only half of the hot water needed to meet minimum sanitation requirements.

The 1957 campaign has been set up so every member company can use it. Flexible enough to suit the needs of the smallest gas company, it is also of value to the largest, serving a metropolitan community. The campaign kit has been mailed to every gas company and contains all the necessary information on how to conduct an active sales campaign for commercial water heaters.

In the folder the dates of the campaign are set forth and the utility is urged to coordinate its own drive with dealer and manufacturer promotions. Strong national advertising will back up the campaign during the months of February, March and April. Thousands of printed sales messages will appear in the trade magazines.

In the portfolio will be found a multiplicity of ideas on running a campaign locally. Among them are meetings held to brief the utility sales force; meetings with health officials together with plumbers and dealers; sponsored meetings of restaurant, hotel and other volume feeding groups; showing of the new film "How Clean Is Clean?"

Actual selling directions include direct mail material and a method of planning the entire campaign so that follow-up can be methodical and effective. Individual sales letters that can be signed by your salesmen are only one of the many suggestions pointing toward sales stimulation.

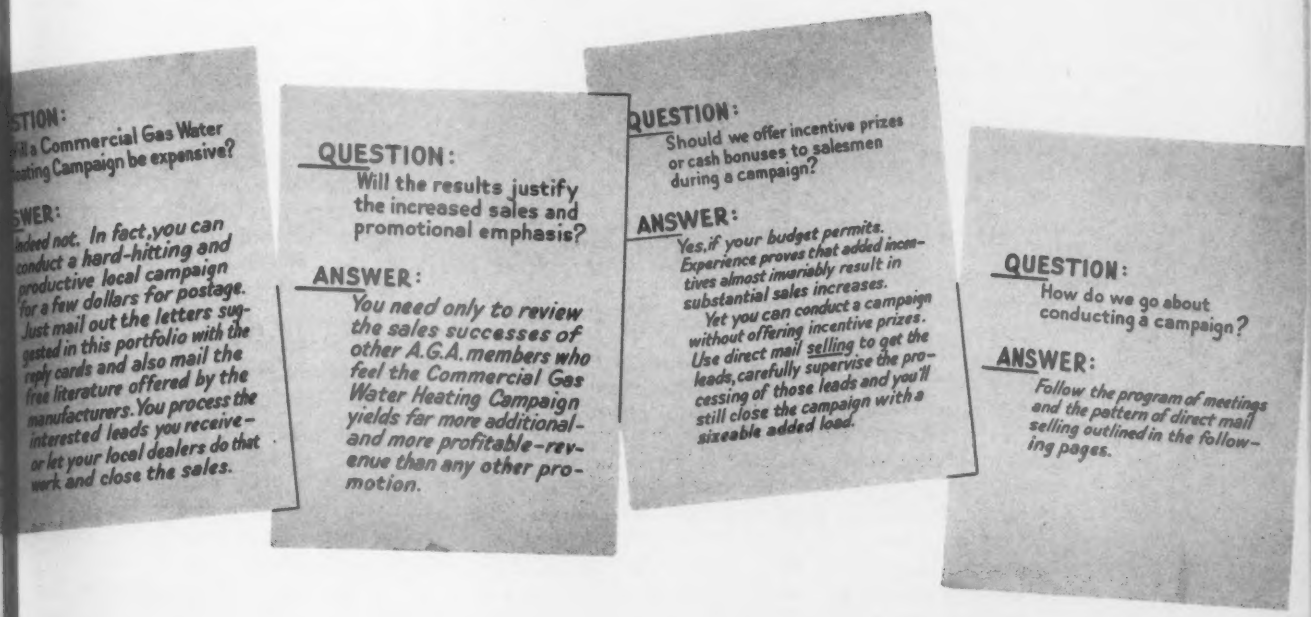
Promotional material is also included in the complete sales folder. Accurate sizing charts will be found to estimate hot water needs and for consultation with plumbers who may be the point of sale for a particular piece of water heating equipment. The A. G. A. 66-page booklet that is recognized as the leading authority on how to select water heating equipment for commercial kitchens should be in the hands of everyone who has any interest in this important subject. They may be secured from the Commercial Promotion Department at A. G. A. at a modest cost.

Something new this year are the several case histories enclosed in the portfolio. They have many suggestions that can be adapted to the particular community covered by your salesmen. These plans have already been used by gas utilities and their worth has been proven.

A bit of sound advice, based on the experience of past years, is given. Some companies have opened their campaigns with blanket coverage of all their customers and prospects. As a result, they have been deluged with replies which they found impossible for their sales force to cover in time to close a sale.

Inquiries should have a response at once, or within a few days. If the prospect has to wait and wait for someone to call from the gas company, his enthusiasm wanes and the chances grow that the sale will not be made.

Cover your entire list, but, spread out that coverage so that your sales force can really take care of hot leads.


STION:
ll a Commercial Gas Water
ating Campaign be expensive?
SWER:
ndeed not. In fact, you can conduct a hard-hitting and productive local campaign for a few dollars for postage. Just mail out the letters suggested in this portfolio with the reply cards and also mail the free literature offered by the manufacturers. You process the interested leads you receive—or let your local dealers do that work and close the sales.
QUESTION:
Will the results justify the increased sales and promotional emphasis?
ANSWER:
You need only to review the sales successes of other A.G.A. members who feel the Commercial Gas Water Heating Campaign yields far more additional—and more profitable—revenue than any other promotion.
QUESTION:
Should we offer incentive prizes or cash bonuses to salesmen during a campaign?
ANSWER:
Yes, if your budget permits. Experience proves that added incentives almost invariably result in substantial sales increases.
Yet you can conduct a campaign without offering incentive prizes. Use direct mail selling to get the leads, carefully supervise the processing of those leads and you'll still close the campaign with a sizeable added load.
QUESTION:
How do we go about conducting a campaign?
ANSWER:
Follow the program of meetings and the pattern of direct mail selling outlined in the following pages.

GROVE LAWRENCE, *CHAIRMAN* · VICTOR F. BITTNER, HERBERT C. JONES, *VICE-CHAIRMEN*

If disaster strikes—Southern Gas Association directory tells members where to turn

A plan for mutual aid in emergencies

By J. H. COLLINS SR.

Chairman, Emergency Planning Committee, Southern Gas Association

You're driving along on a lonely road, miles from assistance of any kind. It's very reassuring to think of that spare tire in the trunk, ready for instant use if you should have an "outage" of air in one of your other four tires.

Gas companies can serve best when they have provision for outages, too. Most of them we can take care of ourselves. But in case of trouble on a big scale, it's imperative to have a neighbor who can act as a spare tire—rushing in to fill a need so there'll be a minimum interruption of service.

To this end, the Southern Gas Association has set up an Emergency Planning Committee. Its function is to show our SGA member distribution companies where to turn for help if calamity should befall them.

The committee's basic job has been the compilation of a directory of our members. It is indexed geographically, listing nearly 100 points in our 14-state area to which a distressed member can turn. And since a 6.70 x 15 spare won't do much good if you're driving on 6.00 x 16 tires, we have compiled sufficient technical data to show which neighboring company can best serve in this emergency.

Our directory, for instance, shows the type of system each member has, its various pressures, its sizes of cast iron and/or steel pipe. There is a catalogue of equipment, including portable air compressors, welding devices, Mueller pressure control equipment, and power-driven saws and tapping machines. Finally there is a run-down on the radio communication facilities of each company.

The directory is in loose-leaf form so names of key personnel can be kept up-to-date merely by substituting a new page.

Long active in SGA and A. G. A., Mr. Collins exemplifies industry cooperation

The Emergency Planning Committee is an outgrowth of a disaster plan outlined by SGA in late 1950, just after the start of the Korean War. As a part of the civil defense setup, we organized a Committee on Security Measures, and emphasis was given to plant security and to the effects of bombing raids on gas distribution systems. A mutual aid agreement was worked out at that time into which our companies entered wholeheartedly.

Questionnaires were sent out to companies and their answers were compiled into our first Emergency Assistance Plan booklet. The committee remained active throughout the war, disseminating information on bombing effects, air raid precautions and disaster plans.

Last year it was voted to reactivate the committee and a new Emergency Assistance Plan booklet was compiled. Again, however, emphasis was on the civil defense aspects of the situation.

In the summer of 1956 it was decided to rename and reorganize the committee as a permanent unit which could function in case of any emergency. We have stressed that all aid must be given on a voluntary basis, since it's impossible to foretell whether a member would be in position himself to lend the assistance sought. And it is clearly understood that the company requesting aid shall bear all the expenses incurred.

The SGA plan presently includes only distribution companies. However, plans are now under way to prepare a supplement to the Emergency Assistance Plan to include transmission companies operating in the 14 Southern and Southwestern states covered by the Southern Gas Association.

Our "spare tire" is ready and waiting. We hope it's never necessary to use it, but if it is, it will keep the wheels turning.

INTRODUCTORY PAGE

TO: S.G.A. Member Gas Companies:

The Committee on Security Measures appointed by the S.G.A. Executive Committee on December 1, 1950, as a part of a three-fold plan on gas company security and defense measures, recommended that a voluntary mutual aid plan be entered into by the S.G.A. member companies, to prevent confusion and lost motion in the event of a bombing attack or other disaster. To this end, the Committee has compiled this directory of companies, their location, and their personnel to be contacted in the order listed, should a company be in need of assistance in such emergencies. Listed also are facts concerning types of systems, equipment, etc., in use by such companies.

Since the ability of a company to assist another at the time of such a request depends on many variable factors, the lending of assistance is on a purely voluntary basis.

A company requesting such aid would be expected to bear all expenses in connection with the rendering of such assistance.

The information, included herein, has been brought up-to-date, as of July 1955, and will replace the directory in your possession, issued to you June 12, 1951.

In order that this directory may serve the purpose for which it was intended, it will be appreciated if the member gas companies will keep the S.G.A. office informed as to changes to be made in the information listed for their company. Other companies will then be notified of such changes and the directory kept as accurate and up-to-date as possible.

The Committee on Security Measures wishes to express to the member companies its appreciation for the cooperation and help it received so generously from them.

COMMITTEE ON SECURITY MEASURES

J. H. Collins Sr., **Chairman**
New Orleans Public Service Inc.
W. F. Bennett, Atlanta Gas Light Co.
C. L. Morgan, United Gas Corp.
L. A. Bickel, Lone Star Gas Co.
W. H. Donovan Jr., Alabama Gas Corp.
P. K. Wallace, Oklahoma Natural Gas Co.
C. H. Palm, **Secretary**
New Orleans Public Service Inc.

August 30, 1955

SAMPLE PAGE

1. NAME
NEW ORLEANS PUBLIC SERVICE INC.

2. ADDRESS OF PRINCIPAL OFFICE
317 Baronne St., New Orleans 12, La.

ADDRESS OF DIVISION OFFICE
527 Magnolia St., New Orleans 12, La.

3. EXECUTIVES TO BE CONTACTED

A. Mr. G. S. Dinwiddie
Business Address, 317 Baronne St., New Orleans 12, La., Tel. No. RA-7751
Residence Address, 2406 Prytania St., New Orleans 12, La., Tel. No. WA-1705

B. Mr. C. L. Nairne
Business Address, 317 Baronne St., New Orleans 12, La., Tel. No. RA-7751
Residence Address, 6031 Pitt St., New Orleans 18, La., Tel. No. UP-5373

C. Mr. J. H. Collins, Sr.
Business Address, 317 Baronne St., New Orleans 12, La., Tel. No. RA-7751
Residence Address, 5870 Memphis St., New Orleans 24, La., Tel. No. GA-5069

D. Mr. H. M. Blain
Business Address, 527 Magnolia St., New Orleans 12, La., Tel. No. RA-7751, Ex 431
Residence Address, 2324 Octavia St., New Orleans 15, La., Tel. No. UN-4693

4. TYPE OF SYSTEM

A. High Pressure—Range—30-125 PSI.
B. Intermediate Pressure—Range—3-25 PSI.
C. Utilization Pressure—6" WC.
D. Cast Iron—Sizes—2" to 30"
E. Steel—Sizes—1" to 36"
F. Domestic Services
a) High Pressure (with service regulator) Yes
b) Utilization Pressure Yes

5. TRANSPORTATION
WILL BE AVAILABLE

6. EQUIPMENT

A. Portable Air Compressors—26
B. Acetylene Welding Equipment—20
C. Portable Electric Welders—9
D. Mueller Pressure Control Equipment—10 (D4 for 2") 1 (3"-8")
E. Power Driven Saws for C. I. Mains—1
F. Power Driven Tapping Machines for C. I. Mains—1 (Size of Taps 2½"-6", Pipe 12"-30")

7. TYPE OF RADIO COMMUNICATION SYSTEM

A. Frequency Used—158.19 MC.
B. Car to Car Transmitting—Yes
C. Are Portable Generating Facilities Available—Yes

Industry news

PNGMA elects Payne, Montgomery

CHRISTY PAYNE JR., vice-president of the Peoples Natural Gas Co., Pittsburgh, has been elected president of the Pennsylvania Natural Gas Men's Association. Mr. Payne succeeds Fred W. Batten, recently elected vice-president of the Columbia Gas Service Corp., New York.

New vice-president of the association is J. G. Montgomery Jr., president of United Natural Gas Co., Oil City, Pennsylvania. P. L. Kesel, secretary and treasurer of Carnegie Natural Gas Co., Pittsburgh, was re-elected secretary and treasurer of the association.

Mr. Payne has been an active participant in PNGMA and the American Gas Association for a long period of time. He is currently chairman of the A. G. A. Promotional Planning Committee. He has also had prominent roles in civic development and fund-raising activities in Pittsburgh.

Management retains control of Alabama Gas Corporation

ALL OFFICERS of Alabama Gas Corp., Birmingham, were re-elected Jan. 22, as the management won a long fight for control of the utility.

The final count in a proxy battle gave 466,573 shares for the management and 358,133 for a group headed by directors Hugh Morrow Jr. and Lewis Odess, both Birmingham investment bankers.

The Morrow-Odess group sought a change in management with a view to selling local distribution systems for municipal operation in some of the 47 towns served. This proposal was resisted by the existing management.

Joseph N. Greene, board chairman, and R. A. Puryear Jr., president, were among the five pro-management directors elected. Others were Arthur H. Lee, Harry H. Pritchett, and Robert S. Weatherly.

Under a cumulative system of voting authorized for the contest, four directors on the Morrow-Odess slate were chosen. They were Mr. Morrow, Mr. Odess, Lawrence Dumas Jr., and D. Cooper Wadsworth.

Columbia Gas System simplification plan in full swing

TWO IMPORTANT steps in the simplification program of The Columbia Gas System became effective Jan. 1.

In one step, the Natural Gas Company of West Virginia was merged into The Ohio Fuel Gas Company. Natural Gas operated entirely within the state of Ohio, serving Alliance, Salem and about 90 other communities in the eastern part of the state. As of Jan. 1, it became a part of Ohio Fuel, which serves Columbus, Toledo, Springfield, Zanesville and about 300 other Ohio communities.

In the other step, Kentucky Gas Transmission Corp., a new company, acquired all of the transmission and storage operations of Central Kentucky Natural Gas Company. The latter became solely a distribution company, serving Lexington, Frankfort, Winchester and seven other communities in the area. Kentucky Gas Transmission will supply gas at wholesale to Central Kentucky and that company's present wholesale customers.

Formation of Kentucky Gas Transmission Corporation is a temporary measure. When the transmission and storage properties of each of the system's companies have been similarly separated, the transmission companies will be merged to form a single, system-wide transmission company.

In another Columbia simplification move, a hearing was set for mid-January by the Public Service Commission of New York on the merger of Binghamton Gas Works and The Keystone Gas Co., Inc. Both are retail distribution companies serving natural gas to some 53,000 customers in New York state. If their merger is approved, the new company will be Columbia Gas of New York, Inc.

Columbia's simplification program will have the ultimate effect of reducing the number of retail gas utility subsidiary companies to one in each of seven states. There will be one interstate transmission company selling gas at wholesale rates.

Roper introduces new line of gas ranges at sales conference

GLEAMING new in design and features, representative models from the complete line of gas ranges manufactured by Geo. D. Roper Corp., Rockford, Ill., were introduced to the company's sales representative and managers at the sales conference held in Rockford Jan. 4-5.

The automatic top burner heat control that was demanded by thousands of housewives last year was again spotlighted as a highly important feature for increasing sales activity.

Stanley H. Hobson, president, welcomed Roper personnel and guests to the conference. Norman C. Kreuter, vice-president and appliance sales manager, presided over the morning sessions. C. S. Stackpole, A. G. A. managing director, was among the guests.

L. R. Jensen, vice-president and appliance general manager, outlined the sales plans for the coming year, emphasizing Roper's present aggressive advertising and promotion efforts. He named research as an important tool in the development of 1957 plans.

E. Carl Sorby, vice-president, told of the many cooking features in the new, broadened line of ranges. Pricing policies used in determining suggested retail prices were explained by Cy Edwards, merchandising director.

The proper use of the ranges was demonstrated by Ione Lankelma, home economics director, and Stan Fowler, sales and service engineer. The demonstration showed the advantages of the "Rotomatic" rotisserie, the "Circle-Simmer" top burners, and the "Ten-Trol"-controlled "Glamor-Grill" griddle. The many features of Roper's "Dry-Aire" gas clothes dryer were also pointed out.

Also discussed by speakers on the program were servicing procedures and policies; the market for built-in ranges; advertising plans for this year; regional promotions conducted last year; and the new package kitchen ensemble with flexibility to add a sink and dishwasher.

Gas rate hike for interruptible customers asked by PG&E

TO OFFSET recent fuel oil price increases which resulted in higher field costs for natural gas, Pacific Gas and Electric Company has filed an application with the California Public Utilities Commission to increase rates for its interruptible natural gas customers. About 1200 of the company's 1,461,000 gas customers will be affected

PG&E asked the commission to remove a ceiling on escalator rates for interruptible customers. The rates automatically are adjusted to the price of fuel oil, but only to a limit of $2 per barrel in tank car lots at the refinery.

The oil now is posted at $2.60, compared to a low of $1.35 in the last decade.

The recent oil price increases have made the $2 ceiling unrealistic, PG&E said. The ceiling was set by the CPUC in 1949, at a time when fuel oil prices were fluctuating between $1.35 and $1.85 per barrel.

Westcoast Transmission expansion program set at $100 million

WESTCOAST Transmission Co., Ltd., has announced a $100 million expansion program that will double the amount of natural gas exported to the United States and will include a new pipeline serving the Inland Empire from southern Alberta gas fields. The expansion program is in addition to a $170 million natural gas pipeline project now under construction.

The new Westcoast program is divided into two phases:

1. An additional $55 million will be spent to enlarge the Westcoast main line in British Columbia presently under construction. This will mean additional compressor stations and other facilities which will raise the capacity of the line from the presently planned 400 million cubic feet per day to 660 million cubic feet per day. Westcoast has contracted to supply an additional 350 million cubic feet of gas per day for export to Pacific Northwest Pipeline Corporation.

2. The remaining $45 million is planned for a 500-ton a day sulphur plant and a 174-mile, 30-inch pipeline stretching from the large newly discovered gas field at Savanna Creek in southwestern Alberta close to the British Columbia border. Gas in this field has been contracted to Westcoast for this line. Contract calls for the delivery of 125 million cubic feet on a peak day. This line will provide service for a number of towns in Southwestern Alberta and Southeastern British Columbia. The bulk of this gas will be exported to Pacific Northwest Pipeline Corporation.

American Meter dedicates new plants in Texas, California

THE SECOND of two new plants to be dedicated by American Meter Company last month was opened at Garland, Texas, with a luncheon and guided plant tours for more than 500 company customers attending the Dec. 11 event. Four days before, the company had opened a new plant and West Coast headquarters in Fullerton, Calif., with similar ceremonies.

The plants have been built as the initial phases of an American Meter expansion program to be centered in the nation's leading gas and oil producing areas. The new plants will make or assemble a complete line of measuring and control equipment for the gas, oil and chemical industries. The company has built six new plants since 1951, making a total of 10 plants in this country and Canada.

The two newest plants have complete repair and service departments for all company products. They will also have expanded warehouse facilities.

Harold W. Wahl is manager of the southern division of Westcott and Greis, Inc., a division of American Meter with headquarters in Garland. James W. Burg is factory manager.

George W. Stevenson is manager of American Meter West Coast operations with headquarters in Fullerton. Carl M. Brehm is factory superintendent.

Southern Counties earmarks $24 million for 1957 expenditures

THE LARGEST budget for any one year in its 46-year corporate history has been earmarked for 1957 by Southern Counties Gas Co., Los Angeles.

The natural gas distribution utility's 1957 budget of $24,406,000 exceeds by 24 per cent the previous 1956 record high.

The gas company's vice-president, Jay Davis Jr., reported that the firm expects to add 57,000 new customers to its lines this year, in an area bounded by Paso Robles and San Clemente.

Nearly half of the 1957 budget—or $12,659,000—has been allocated for equipment to bring gas service to customers not now connected to the company's lines. Altogether the company in 1957 expects also to add 2,000 miles of pipeline to its distribution system.

Another major expenditure is the $7,316,000 which the company will lay out toward construction of a 241-mile, 30-inch diameter pipeline from the California-Arizona border to Newhall to carry added amounts of out-of-state gas for use in southern California. Southern Counties is building the line jointly with its affiliate, Southern California Gas Co.

For replacement of older mains, services, meters and other equipment, the company expects to spend $2,638,000 in 1957.

Servel cuts price on three and one-half-ton gas air conditioner

IN SPITE of rising material and labor costs, Servel, Inc. has announced that the factory price of its 3½-ton gas-operated "Sun Valley" air conditioner had been cut seven per cent.

Announcement of the price cut was made at a sales meeting in Evansville, Ind., by A. J. DeFino, vice-president and general manager of the company's "all-year" air conditioning division.

In revealing the factory price reduction, Mr. DeFino pointed out that basic raw material prices have increased from five to seven per cent. "Steel prices are up $8 a ton, and further increases of $4 to $5 per ton are probable. Copper is up eight cents per pound, and aluminum six cents per pound. Nickel is up $185 per ton. Wage rates are up six cents per hour," he said.

"This new seven per cent price reduction was made possible," he said, "by a capital investment which doubled our rate of production, by improved manufacturing techniques, and by design changes which not only lowered the cost of the product but also increased its performance efficiency."

As one example of several recent Servel advancements which have served to lower costs and at the same time to step up performance, Mr. DeFino mentioned the introduction of an entirely new flat-tube type of generator. Less expensive to make than the previous cylinder-type tube, the new flat-tube generator provides more heating surface in the same space, and responds more quickly to heating and cooling demands.

As another example, he referred to the addition of a pumping control, which regulates the rate at which the refrigerant flows through the system.

Three publications on neighborhood rehabilitation available

THE AMERICAN Council to Improve Our Neighborhoods (ACTION), sponsored by A. G. A. and other organizations, has released a new report on how a pioneer citizen group in Chicago is renewing its neighborhood through organized action.

Entitled *Organization of Block Groups for Neighborhood Improvement: The Hyde Park-Kenwood Community Conference* (R-14), this booklet tells how to develop grass roots participation for neighborhood improvement. It also details the ways problems of human relations and area improvement have been handled.

Two other new reports cover aspects of the housing code. *Municipal Housing Codes in the Courts* (R-11) is a comprehensive compilation of court actions on cases arising from the enforcement of housing codes. It is of particular significance to lawyers, municipal officials, and code-drafting committees of citizen groups.

Housing Code Provisions: A Reference Guide for Citizen Organizations (R-15) provides a yardstick for a community to determine its own minimum housing standards. Based on a survey of over 50 ordinances now in operation, it gives a detailed guide to the kinds of provisions they generally include.

An illustrated catalogue of ACTION publications and program materials is now available. Single copies of the aforementioned reports are free. Copies in quantity orders (with a minimum of four) cost 25 cents each. The address is ACTION, Box 462, Radio City Station, New York 20, N. Y.

PNGMA utilities plan capital expansion of $52 million

NATURAL GAS utilities serving Western Pennsylvania plan to spend $52,228,050 in 1957 for improvement and expansion of gas service, the Pennsylvania Natural Gas Men's Association has announced.

This record outlay is nearly a 20 per cent increase over budgeted capital expenditures for last year, and is the largest program ever reported by the association. The total amounts to approximately $53.50 for each of the more than 975,000 natural gas customers in the area.

Drilling of new wells and distribution facilities continue to dominate the gas utility budgets, PNGMA reported, as was the case last year. For each category, spending in 1957 will be at a peak level.

A total of $16,380,000—nearly one-third of the capital budget—has been allotted for additions and enlargements of distribution systems.

To maintain record production of natural gas in the area, utilities are planning to spend another $13,749,000 in the search for new natural gas pools and drilling of production wells in the Appalachian area of western Pennsylvania, West Virginia and Kentucky.

This total, however, is less than half the amount that will be spent on well drilling, inasmuch as it is exclusive of unbudgeted outlays by independent drillers and producers. At the end of 1956, of 58 gas wells being drilled in 21 Pennsylvania counties only 19 were directly projects of gas utilities. A number of the remainder were being drilled by industrial concerns for their own use, but many were "wildcats" drilled by independent operators.

Enlargements and additions by PNGMA utility member-companies to cross-country transmission pipelines are allocated $13,512,900 in 1957. Still further improvements of underground storage facilities serving the area, already by far the most extensive in the nation, are planned to cost $5,797,900.

Public Service '57 expenditures to exceed $130 million

IN 1957, for the second successive year, expenditures by Public Service Electric and Gas Co., Newark, N. J., for electric and gas additions and improvements to its plant and properties will exceed $100 million, again setting a new all-time high for the company, Lyle McDonald, chairman of the board, has announced.

Mr. McDonald said that construction expenditures for 1956 will total approximately $119 million, and for 1957, will be upwards of $130 million.

In the past five years, Public Service has spent over $450 million for plant additions and improvements.

A major part of increased gas requirements is expected to stem from the addition of new gas heating customers. More than 28,000 such customers were added during 1956 bringing the total number of gas heating installations to approximately 190,000. During 1957, the company plans to install 280 miles of gas mains and 30,000 gas meters.

The program of converting customers' appliances from mixed gas operation to the use of straight natural gas in those outlying sections of the territory close to natural gas pipelines is being continued and during 1957 will affect approximately 90,000 additional customers. By the end of the year more than 200,000 customers will be served with straight natural gas.

Two large electric generating stations are under construction by Public Service, one of which, the Linden Station, is expected to be ready for operation this year. Preparation of the site for the other new station, the Bergen Station in Ridgefield, began in 1956. The Linden Station will have two electric generating units of 225,000-kilowatt capacity each and the Bergen Station will have two units of 290,000-kilowatt capacity each.

Michigan Consolidated to spend $31 million in new construction

MICHIGAN CONSOLIDATED Gas Company will spend approximately $31.2 million on new construction in 1957, Henry Tuttle, president, has announced.

The utility will invest nearly $17.5 million in new facilities in its Detroit district and about $10.4 million in its Ann Arbor, Grand Rapids, Muskegon and Northern districts. The balance will go for indirect construction costs throughout the system. Michigan Consolidated plans to build about 400 miles of new distribution mains, half of which will be in the Detroit area.

The company anticipates taking on 26,000 new customers in 1957 and adding 65,000 space heating customers to its lines. Mr. Tuttle said that practically every new home built in areas served by Michigan Consolidated will be heated with natural gas, which will continue to sell for considerably less than either coal or oil.

At present some 460,000 homes and shops, about 55 per cent of the company's 835,000 customers, heat with natural gas. The company expects 65 per cent of its customers to be heating with gas by 1959, he said.

Mr. Tuttle also foresees great potential growth in industrial sales with more manufacturers turning to inexpensive natural gas in order to improve products and avoid the problems and costs involved in storing and handling solid and liquid fuels. The use of gas for industrial and home air conditioning presents additional growing markets, he said.

The company expects to sell as much as 1.06 billion cubic feet of gas on a single day throughout its system before this winter is over, of which about 800 million will be distributed in Detroit.

Lone Star and subsidiary budget $30 million for construction

A RECORD $30,800,400 budget covering 1957 construction expenditures of the Lone Star Gas Co., and its wholly-owned subsidiary, Lone Star Producing Co., was announced in Dallas by President D. A. Hulcy.

This year's construction budget represents an increase of $1,097,400 over the 1956 figure of $29,703,000, which also was a record amount allotted for expansion and development of physical properties.

The budget represents $26,750,600 in new construction and $4,049,800 in improvements of present customer service facilities. Major items listed include construction of new transmission and gathering pipelines, enlargement of compressor station facilities, drilling of oil and gas wells, acquisition of leases, expansion of underground gas storage facilities, construction of new office and warehouse buildings and extensions to existing distribution systems.

The budget sets out $19,895,800 for Lone Star Gas Company and $10,904,600 for Lone Star Producing Company projects. Lone Star Gas Company expenditures are broken down as follows: transmission division, $7,568,000; general division of distribution, $5,570,800; Dallas division of distribution, $3,230,000; and Fort Worth division of distribution, $3,519,000.

Servel holds factory schools for air conditioning personnel

A SERIES of factory schools for the air conditioning personnel of distributors, utilities, and dealers, has been scheduled by Servel's "All-Year" air conditioning division.

The four-day seminars on application engineering and sales are being conducted under the supervision of Robert K. Eskew, sales manager. These schools were set for Jan. 14-17, Feb. 4-7, February 18-21, and March 11-14. Two two-day advanced schools on water chiller service were arranged for the end of last month. A three-day primary school on water chiller service has been scheduled for February 11-13.

Field schools for utility personnel in the servicing of three-ton and five-ton "All-Year" air conditioning units will be held at gas company offices in different parts of the country. The first two of these field schools were held at the Southern Union Gas Company's El Paso office the week of Jan. 7, and for the Austin office the week of Jan. 14. All service schools are supervised by Robert E. Davis, service manager.

Win AIM citation

OKLAHOMA Natural Gas Company has received a citation for excellent management from the American Institute of Management. H. A. Eddins, president, accepted the award for the company. The award, given to a number of outstanding American and Canadian companies, is based upon searching evaluation of the recipients' management policies, practices and accomplishments in the following areas: economic functions, corporate structure, health of earnings, service to stockowners, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor and executive evaluation.

New office building

VULCAN-HART Manufacturing Co., of Louisville, Ky., and Baltimore, Md., has constructed a $100,000 general office building adjacent to its Louisville plant. The building contains 8,100 square feet of floor space. It features year-round air conditioning, suspended acoustical ceiling throughout, and underfloor conduits. The lighting system is of the recessed, continuous strip type. The building houses executive offices and general offices, and has a display room for Vulcan-Hart products.

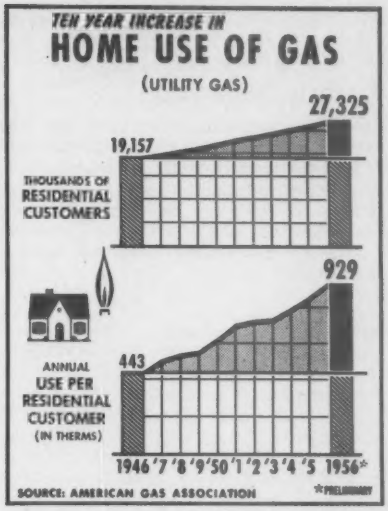
Add new building

A MODERN, air conditioned building will be added to the Toledo, Ohio, plant facilities of Surface Combustion Corporation. The building, 12,400 square feet, will house engineering and drafting groups and add 30 per cent to the existing design capacity of the company. Surface Combustion is undergoing a general growth program which also includes the recently completed 20,000 sq. ft. manufacturing plant in Toledo, and the groundbreaking of a new 43,000 sq. ft. plant of Webster Engineering Co., the industrial burner division in Tulsa, Okla., owned by Surface Combustion.

Open new plant

A MODERN $2 million manufacturing plant, more than doubling the size and output of the installation it replaces, was officially opened Jan. 3 by the Bridgeport thermostat division of Robertshaw-Fulton Controls Company. The 180,000-square-foot plant on a 15-acre site in Milford, Conn., is located six miles from the previous plant. Since the move to occupy the new plant began several months ago, more than 200 employees have been added to the staff, bringing the total to 600.

Add 800,000 a year



The gas utility industry has added an average of over 800,000 residential customers yearly in the past decade, for a total increase of 43 per cent. The average amount of gas used per customer has more than doubled in this period

Ruud to continue four-day courses on commercial water heating

THE RUUD Institute of Gas Water Heater Engineering graduated approximately 300 men during 1956, its first year of operation. Popularity of the commercial water heating course has influenced Ruud Manufacturing Company to schedule school sessions for 1957.

The institute had fourteen groups of men receive training at the Ruud headquarters in Kalamazoo, Michigan. Diplomas were awarded to sales managers, salesmen and engineers from gas utilities and LP-Gas companies, plus plumbing contractors and representatives of plumbing wholesalers.

The four-day school sessions already scheduled for 1957 will take place during the weeks of Feb. 11, 18 and 25, and March 11 and 18. Additional sessions will be scheduled.

The institute was created to fill a need for organized education of all who promote, specify, sell, and install commercial gas water heaters.

The curriculum includes a study of the commercial water heating markets, their individual quantity and water temperature demands, the yardsticks to use in selecting and installing equipment, and a review of sales and revenue potentials.

A.G.A. announces new publications during January 1957

LISTED BELOW are publications released during the past month, and up to closing time of this issue of the MONTHLY. Information in parentheses indicates the audiences at which each publication is aimed.

ACCOUNTING

• **Financial Reporting Practices and Trends as Disclosed by an Analysis of the Annual Reports to Stockholders of 56 Gas and Electric Companies for the Years 1953 Through 1955** (for chief accounting officers). This publication was sponsored by the General Accounting Committee of the Accounting Section of A. G. A. and Accounting Division of EEI, and is available free of charge from the A. G. A. Accounting Section. Quantity orders are temporarily restricted.

LABORATORIES

• **Heat Application to Gas-Fired Portable Deck Bake Ovens,** by T. E. Hampel and R. F. Neu (for gas utilities, equipment manufacturers). This bulletin, A. G. A. Laboratories Research Bulletin No. 73, was sponsored by the A. G. A. Committee on Industrial and Commercial Gas Research, and is available from A. G. A. Laboratories and Headquarters at $2 a copy.

The following publications of requirements effective Jan. 1, 1957, are all sponsored by A. G. A., and available from A. G. A. Laboratories and Headquarters. They are chiefly of interest to gas utilities, equipment manufacturers, and city authorities.

• **American Standard Approval Requirements for Central Heating Gas Appliances, Z21.13.1-1956, Vol. I, Steam and Hot Water Boilers;** $2 a copy.

• **American Standard Approval Requirements for Central Heating Gas Appliances, Z21.13.2-1956, Vol. II, Gravity and Forced Air Central Furnaces;** $2 a copy.

• **American Standard Approval Requirements for Central Heating Gas Appliances, Z21.13.3-1956, Vol. III, Gravity and Fan Type Floor Furnaces;** $2 a copy.

• **American Standard Listing Requirements for Domestic Gas Appliance Pressure Regulators, Z21.18-1956;** $1.50 a copy.

• **American Standard Approval Requirements for Gas Water Heaters, Z21.10.2-1956, Vol. II, Side-Arm Type Water Heaters;** $2 a copy.

PAR

• **PAR Briefs** (for gas company executives). Sponsored by the PAR Committee, and available free from A. G. A. Headquarters.

RESEARCH

• **Effect of Certain Variables on Corrosion of Gas-Fired Domestic Water Heaters,** by Dr. Robert C. Weast (for manufacturers, utilities). Available from A. G. A. Headquarters at $1 a copy.

STATISTICS

• **Monthly Bulletin of Utility Gas Sales, November 1956** (for gas companies, financial houses). Sponsored by and available from Bureau of Statistics; free.

• **MR Briefs No. 5** (for gas company sales managers and market researchers). Sponsored by Marketing Research Committee, and available free from A. G. A. Bureau of Statistics.

• **Measuring the New Housing Market** (for gas company sales managers and market researchers). Sponsored by Marketing Research Committee and available free from A. G. A. Bureau of Statistics.

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

● **Arkansas Louisiana Gas Company:** The FPC granted company authorization to construct and operate natural gas facilities estimated to cost a total of $6.6 million. Proposed facilities are designed to enable Arkansas Louisiana to sell gas to industrial consumers or to connect additional supplies to its system.

● **Coastal Transmission Corporation and Houston Texas Gas and Oil Corporation:** Both companies were conditionally authorized by the FPC to construct and operate joint pipeline facilities which will transport nearly 250 million cubic feet of natural gas daily from Texas and Louisiana fields to markets over wide areas of Florida. Coastal Transmission will build 574 miles of pipeline from a point in Hidalgo County, Texas, to connect with Houston Texas Gas in East Baton Rouge Parish, Louisiana. Included in Coastal's over-all cost of $54.6 million is a gathering system of 414 miles, tapping some 42 producing fields in Texas and Louisiana, and 4 main line compressor stations with a total capacity of 16,500 horsepower. Houston Texas Gas, the sole customer of Coastal Transmission, will construct 943 miles of main line extending from the connection in East Baton Rouge Parish across Louisiana, Mississippi, Alabama, the Florida Panhandle, and then turn south to a terminus below Miami in Dade County. An additional 682 miles of laterals will serve 17 industrial customers and 34 distributors. Four compressor stations of 6,000 horsepower, each, are included in the overall cost of $94.3 million. Initial deliveries will average 249 million cubic feet daily and will reach a maximum of 274 million cubic feet. This gas includes approximately 150 million cubic feet purchased in Louisiana and Texas by Florida Power & Light and Florida Power as boiler fuel, and transported by Coastal Transmission and Houston Texas Gas for a transportation charge.

Conditions imposed by the FPC require both companies to file new gas tariffs and to submit financing plans to the commission for approval. Coastal's tariff must provide separate charges based upon reasonable allocation of costs between gas sold to Houston Texas Gas and that transported for the power companies. Houston Texas Gas is required to make each class of service bear its proper share of costs, modify minimum bill provisions, eliminate cancellation provisions in interruptible service contracts, and to eliminate the cancellation and reduction-in-take provisions included in the power company's contracts.

Dissenting commissioners claim that the condition requiring power companies to bear an allocated share of cost for transportation will raise the cost of gas above competing fuels, causing rejection of gas as a fuel by the power companies and result in unused line capacity of nearly 60 per cent.

● **El Paso Natural Gas Company:** The company has been authorized by the FPC to construct natural gas facilities estimated to cost $84.7 million. Included in the authorization is approximately 290 miles of pipeline, and an additional 56,950 compressor horsepower on the company's system in Texas, New Mexico and Arizona. Facilities will be used to deliver an additional 75 million cubic feet daily to both Southern California Gas and Southern Counties Gas. An additional 75 million cubic feet daily will go to Pacific Gas & Electric. The gas will be delivered through existing delivery points at or near the Arizona-California state line. San Juan Basin fields will supply 50 million cubic feet and the Permian Basin 25 million cubic feet. The Panama Field in Texas will supply 75 million cubic feet in exchange for an equal amount from the Permian Basin. The commission pointed out that by 1958, El Paso's customer requirements will exceed available supplies, and the method of financing current construction will reduce the common stock equity to less than 20 per cent. The commission will require the company, in its next certificated hearing, to show how its future gas requirements can be met, and to present a financing program designed to increase the equity ratio.

● **Gulf Interstate Gas Company:** Gulf Interstate has received temporary authorization by the FPC to operate natural gas facilities being constructed in Louisiana, Mississippi, Tennessee and Kentucky at an estimated cost of nearly $9 million. Facilities include additional compressor horsepower at the Acadia, Louisiana station and the Stanton, Kentucky station, construction of 3,500 horsepower compressor stations at Rapides, La., Humphrey and Alcorn, Miss., and at Macon, Tenn., together with small gathering lines and measuring stations. Construction will enable Gulf Interstate to transport United Fuel Gas Company's new gas supplies from South Louisiana fields and will raise daily capacity to 448 million cubic feet, and on an overload basis, to a maximum of 473 million cubic feet.

● **Texas Eastern Transmission Corporation:** FPC Examiner Purdue issued a decision, subject to review, authorizing company to construct a lateral line in Harris County, Texas, from an existing line to a point in the Alco-Mag field at an estimated cost of $857,000. Facilities, for which temporary authorization was granted last February, will make gas available from the Alco-Mag and Aldine fields.

● **Transcontinental Gas Pipe Line Corporation:** FPC Presiding Examiner E. J. Woodall filed a decision that authorized Transcontinental to construct and operate over 350 miles of pipeline in Louisiana, Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Maryland and Pennsylvania at an estimated cost of $50.9 million. The additional facilities, including installation of 12,750 compressor horsepower, will raise system capacity by 126 million cubic feet daily to 832 million cubic feet daily. Last July Transcontinental was granted temporary authorization to construct 252 miles of the proposed pipeline and the addition of 12,750 compressor horsepower, and in October received temporary authorization to operate these facilities. In this latest action, a proposal by Trans-Carolina Pipe Line Corporation to serve the Tidewater areas of the Carolinas was denied in favor of intrastate service. Competitive intrastate projects, by North Carolina Natural Gas and Carolina Pipeline, were authorized by their state regulatory boards. Half of Transcontinental's additional sales capacity has been allotted to the Carolina companies and the remainder will go to 27 new and existing customers in New York, New Jersey, Pennsylvania, Maryland, Virginia, Georgia and Alabama.

Rate cases

Colorado Interstate Gas Company has requested FPC approval of a 7.2 per cent increase in the wholesale price of natural gas to cover the increased cost of purchased gas, new plant investment and a 6¾ per cent rate of return. The higher rates, to become effective Feb. 1, 1957, will apply to 12 of 13 wholesale customers in New Mexico, Colorado, and Wyoming and will result in a total increase of $3.1 million annually. Interstate is already collecting, subject to refund, an increase totaling $10.3 million.

Colorado-Wyoming Gas, anticipating approval of its supplier's requested increase, also applied to the FPC for an increase in rates amounting to $766,000 annually. Colorado-Wyoming's plea not only covered Interstate's higher charges but also cited increased labor and material costs plus a 6¾ per cent rate of return. Increase also would become effective Feb. 1.

In other FPC actions, National Fuel Gas Company has been permitted to simplify its corporate structure by merging its subsidiary, Republic Light, Heat and Power Company into Iroquois Gas Corp., another subsidiary. Since National acquired Republic stock from Cities Service Company in 19[illegible] the operations of Republic Light, Heat and Power and Iroquois Gas have gradually been integrated into virtually a single operating unit.

Correction

Through a typographical error in the January issue of THE MONTHLY, Ralph W. Fouse was referred to as president of Brooklyn Borough Gas Company in an article reporting his appointment as a member of the company's board. Mr. Fouse is vice-president.

Servel tests new five-ton heating-cooling gas conditioner

FIELD TESTING has been started on a new five-ton Servel gas-operated heating-cooling air conditioner, which will be smaller and lighter than present models of similar capacity.

The first two test models of the experimental unit have already been set up in Texas and in Indiana, and additional test installations will be made soon in many other sections of the U. S., to provide performance information under various climate and weather conditions.

The new experimental model, presently known as XFE-96-G, is of the direct-fired, single-coil type which proved so successful in Servel's 3½-ton "Sun Valley" model. Its refrigerating cycle will provide the cooling equivalent of five tons of ice per day. Its heating cycle will have a capacity of 96,000 Btu per hour.

The compact design of the proposed unit will permit it to be shipped complete with controls in one package, and to be delivered to the site ready for installation. It can be attached to utility services in approximately one hour.

It will have minimum electric power requirements. The fan will be operated by a ½-horsepower motor, and the auxiliary controls will require only 50 watts.

A comparison of the specifications of the experimental model with those of present five-ton air conditioners indicates that the proposed unit will be easier to handle and install, and will require less than half as much floor space. The comparative figures are:

	Experimental Model	*Present Models*
Width	62¾"	66¼"
Height	81⅝"	84½"
Depth	26¼"	57½"
Weight	1,200 lbs.	3,000 lbs.

Ohio Fuel announces plans for tenth underground storage area

PLANS for the development of The Ohio Fuel Gas Company's tenth underground storage area for natural gas, in Vinton County, have been announced. The project, which will cost $2,700,000 is scheduled to get under way in 1957, pending approval of the Federal Power Commission.

It will be Ohio Fuel's sixth largest storage area, with a capacity of 10.5 billion cubic feet of gas.

Development of this area—the McArthur storage area—will include: (1) Drilling 90 new storage wells, (2) Conversion of six former producing gas wells to storage, (3) Installation of 15.1 miles of new pipelines, and (4) Construction of a new compressor station, including three buildings to house compressor engines, measuring equipment, and auxiliary equipment.

Ohio Fuel also plans to enlarge its Holmes underground storage field this year by drilling 10 new storage wells, and converting 51 former producing gas wells to storage there.

In addition, the gas company plans to develop its other storage fields further by drilling 25 additional storage wells, and by fracturing 60 existing storage wells. Fracturing cracks open the underground gas-bearing sand formations so gas may be put into and taken out of storage at a faster rate, Mr. Ferguson said.

This additional storage development will cost Ohio Fuel $720,000.

Short course on underground corrosion to be offered in Virginia

THE SECOND annual Applachian underground corrosion short course, directed primarily at operating personnel, will be held at West Virginia University, Morgantown, June 4-6.

There will be a basic course in fundamentals, and an intermediate one for those who attended last year's course. New on the program for this year is a field demonstration, with test procedures and techniques to be performed on buried structures at a test site on the campus.

Papers on coal tar, asphalt, waxes, plastic tapes, and coal tar tapes will be presented at a coatings symposium. The fundamentals courses will deal primarily with pipeline corrosion, and a special symposium will be held for the power and communications industries. Other subjects to be covered are bacterial corrosion, well casing corrosion, electrolysis switches, and design and application of cathodic protection. Manufacturers of corrosion control materials will exhibit their products.

Rooms will be available at the university.

Baltimore, Arkansas Western, win Accident Prevention Award

The A. G. A. Accident Prevention Award was won by the gas division of Baltimore Gas and Electric Co., which reduced its accident frequency rate by 32 per cent in 1955. The same division also won the Safety Achievement Award—it had the lowest accident frequency rate of all A. G. A. member companies. Left to right: J. T. Wolfe, executive vice-president; R. H. Arndt, general superintendent; C. P. Crane, president; T. J. Dwyer, assistant general superintendent

Arkansas Western Gas Company received the A. G. A. Accident Prevention Award, which goes to gas companies who reduce their accident frequency rate by 25 per cent or more. SGA's 100,000 man-hour safety awards went to the company's Rogers town plant employees, and gas transmission employees. Left to right: L. L. Baxter, president; James Walker, safety director; E. R. Cunningham; W. D. Drake

Peoples Gas Light & Coke promotes Munroe, Condon, Fortunato

THREE TOP LEVEL promotions in the sales division of The Peoples Gas Light and Coke Company, Chicago, have been announced by Bernard H. Wittmann, vice-president in charge of sales.

Roy B. Munroe, manager of domestic sales, was appointed assistant to the vice-president in charge of sales; James J. Condon, manager of commercial sales, was named manager of the domestic sales department succeeding Mr. Munroe, and Vincent D. Fortunato, assistant manager of the commercial sales department, was named manager of that department to succeed Mr. Condon. The appointments became effective Jan. 1.

Mr. Munroe, a graduate of the Colorado School of Mines, became associated with the utility in 1933 as a student salesman. He later was promoted to sales supervisor; in 1936, director of south sales; and in 1953, manager of domestic sales. In his new position, he will assist Mr. Wittmann in all the duties of that office and in the absence of the vice-president act in his stead. Before joining Peoples Gas, Mr. Munroe was an industrial engineer and an appliance salesman for The Gas Service Co., Kansas City, Missouri.

Mr. Condon has been with the utility for over 25 years. He was promoted to senior heating engineer in January 1948, assistant manager of commercial sales in September 1948, and manager of the department in July 1949. He attended the Armour Institute of Technology and Northwestern University.

Mr. Fortunato became associated with Peoples Gas in 1934, as a senior student engineer in the research and testing department. He was appointed a senior engineer in that department in 1941, a domestic sales engineer in 1948, a senior commercial sales engineer in 1950, a supervisor in that department in 1951, and assistant manager last September. He is a graduate of the University of Illinois.

All three are members of the American Gas Association.

Name Johnson assistant to vice-president and general manager

HERBERT E. JOHNSON has been appointed assistant to the vice-president and general manager of the Hartford (Conn.) Gas Company. Mr. Johnson, a graduate of Yale University, joined the company in 1936 and has held several responsible positions in the operating division of the company, most recently that of superintendent of customer service division. He is an A. G. A. member.

Albert C. Dudley succeeds Mr. Johnson and will take over the duties of superintendent of customer service. He began service with the company in 1950 after his graduation from Yale University, where he received his degree in engineering.

The promotion of Howard M. Johnson to supervisor, residential appliance sales division, has also been announced. Mr. Johnson started with the company in 1939, and worked in various departments. He was a residential salesman before his promotion.

Personal and otherwise

Half-century of service

MORE THAN 100 Northern Indiana Public Service Company employees gathered recently to honor Walter E. Nichols at a surprise dinner party. Mr. Nichols, manager of gas operations, retired Jan. 1 following a half-century of continuous service with NIPSCO. He started as draftsman with one of the predecessor companies, and later served as engineering assistant, district superintendent, manager of industrial relations, supervisor of gas operations, and since 1946, manager of gas operations. He has taken part in various American Gas Association activities, and was a member of A. G. A. for approximately 23 years.

Johnson engineer

WALTER H. JOHNSON joined Liquefied Petroleum Gas Association Dec. 15 as staff engineer. He will coordinate LPGA's safety, technical education and standards development work from the Chicago office. Prior to joining LPGA, he had been with Socony Mobil Oil Co., Standard Oil of Indiana, and Pure Oil Company. Mr. Johnson will be secretary to LPGA committees having technical interests. He will coordinate safety training work, conduct schools for the industry and regulatory agencies in the field of safe practices, and act as a technical editor of *LPGA Times*, the association's monthly industry magazine.

Hayes wins Equitable award for work in United Fund campaign

JOHN H. HAYES, personnel director, Equitable Gas Co., Pittsburgh, Pa., received the company's President's Public Relations Award for outstanding community service.

A. W. Conover, president of Equitable, while presenting the award, pointed out that Mr. Hayes inaugurated the Equitable Employees Unified Charities Plan in 1954, making Equitable one of the first companies in Allegheny County to adopt the "One Campaign for All" idea, and that he also helped sell the idea to many others. Mr. Hayes served as chairman of the Clinic Leaders Solicitor Training Committee for 1956 and was responsible for the training of over 50 clinic leaders who in turn trained solicitors for the United Fund Campaign.

His success in this program is reflected in the 108 per cent of quota attained by the United Fund Campaign in Allegheny County. Equitable Gas Co., through the personal efforts of Mr. Hayes in training and supervising company solicitors, received the 100 per cent or over award banner of United Fund.

Keegan president

WILLIAM J. KEEGAN has been elected president of Siegler Corporation's subsidiary, General Water Heater Corp., Burbank, California. He succeeds John G. Brooks, Siegler president, who has served as interim president of the subsidiary since its acquisition by the parent company last July. Mr. Keegan, a graduate of the University of Wisconsin and a CPA, has been associated with Birtman Electric Co., Chicago, as executive vice-president and treasurer. Previously, he served as assistant general manager of the Brainard Steel Division of Sharon Steel Corp., and assistant to the president of Nesco, Incorporated.

Thomas joins Trunkline

ERUE THOMAS, Houston engineer and attorney, has joined Trunkline Gas Company as superintendent of gas supply. Mr. Thomas comes to Trunkline from Humble Oil & Refining Co., where for the past nine years he has served in various engineering capacities in the firm's gas department. His experience includes engineering work in the fields of natural gas system and gasoline plant design and operation, gas sales contracting and work with the legal department on Federal Power Commission regulatory procedures. In his new position with Trunkline Gas, Mr. Thomas will be responsible for the conducting of gas supply activities.

Chosen 'Miss Spokane'

SUZANNE THOMPSON, home service director for the Spokane (Wash.) Natural Gas Co., has been named the new "Miss Spokane" for 1957 by the Chamber of Commerce in that city. A committee of five judges chose her from among three finalists in a contest held in November. During the coming year, she will act as official hostess to visiting dignitaries and at various civic functions. Miss Thompson was sponsored by the utility in the competition for the position. Aspirants to the "Miss Spokane" title are judged on the basis of personality, attractiveness, poise, photogenic qualities, and speaking ability. Miss Thompson joined the utility last October.

Stephens named Arkansas Louisiana chairman

W. R. Stephens

W. R. STEPHENS last month became chairman of the board of directors of the Arkansas Louisiana Gas Co., Shreveport.

He resigned as president and director of the W. R. Stephens Investment Co., Inc., Little Rock, Ark., to assume his new duties. He was elected to the board on Nov. 30, to become effective Jan. 1. His office will be at Little Rock.

Mr. Stephens' entry into the utility field came several years ago when his company purchased the Ft. Smith Gas Corp., at Ft. Smith, Arkansas. Under Mr. Stephens' ownership, that company's connections have doubled in number and its gas reserves have been vastly enlarged. The Stephens company also has acquired several municipal water systems.

In the fall of 1954 the Stephens company acquired the majority common stock of Arkansas Louisiana Gas Company from Cities Service Company.

Selas names two

QUENTIN M. Bloom has been promoted to manager, furnace and kiln division, and Charles A. McFadden, to manager, general industry division, of Selas Corporation of America. Mr. Bloom joined Selas in 1940 as design engineer and subsequently served as sales engineer and as project engineer. Mr. McFadden's efforts will be concerned with applying Selas automatic heating equipment to metalworking operations, including brazing, heat treating and heating for hot working, and to batch heating methods for chemical processing and paint and varnish production. He has been with Selas since 1943.

Appoint J. S. Davis general sales manager of Southern Union Gas

JOE S. DAVIS has been appointed general sales manager for Southern Union Gas Co., Dallas, Texas. In this newly created position Mr. Davis will be responsible for supervising Southern Union's expanding sales program. The company presently has ten sales districts throughout a 63-town area served in Texas, New Mexico, Arizona and Colorado. In addition to the utility's residential and commercial merchandising activities, Mr. Davis' responsibilities also will include the coordination of a cooperative sales program with appliance dealers, architects and builders.

Mr. Davis has had more than 20 years of experience as a salesman and sales manager. For the past several years he has served as regional sales manager for Amana, Inc., makers of refrigeration and air conditioning equipment.

Names in the news—a roundup of promotions and appointments

UTILITIES

The Berkshire Gas Co., Pittsfield, Mass., announces the appointment of **William R. Stevens** to the newly created position of vice-president in charge of operations.

Thomas P. Murphy has been appointed supervisor of public relations at Equitable Gas Company. He will be responsible for company information releases and for coordinating various public relations activities. Mr. Murphy has been with Equitable for three years, as a dealer relations and commercial sales representative.

Clifford A. Stockhoff has been appointed sales manager of the Albuquerque district of Southern Union Gas Company. He will be in charge of the utility's residential and commercial sales activities, including a sales program for appliance dealers, architects, builders, and contractors, in Albuquerque, Belen, Bernalillo, and Los Lunas. Mr. Stockhoff replaces **H. G. Jarl**, who has been transferred to Flagstaff, Ariz., where he will supervise a dealer sales program in the utility's Arizona territory.

The Brooklyn Union Gas Company announces the promotion of **John B. Olsson** to manager of the commercial department. Mr. Olsson started with the company as a treasury department clerk in 1931, and has divided his 25 years of service between that department and the commercial department.

PIPELINES

R. P. Drybread and **James W. Penn** have joined the gas reserves and availability section of Northern Natural Gas Company, at Northern's Omaha headquarters. Mr. Drybread, formerly with Frankfort Oil Company and Phillips Petroleum, will now be reserves engineer for the utility. Mr. Penn, formerly with Gulf Oil, will now be geological engineer.

Creighton R. Hodges Jr. has been named chief accountant for Texas Eastern Transmission Corporation. He will supervise the entire accounting work of the Shreveport, La., utility.

Effective Jan. 1, **John Potter** became manager of community relations for Texas Gas Transmission Corporation. Formerly supervisor of publications, Mr. Potter will coordinate the company's activities and press relations in the areas adjacent to its pipeline system. He will continue as editor of the company's employee magazine, *The Line Walker*.

MANUFACTURERS

The Permaglas division of A. O. Smith Corporation announces the promotions of **W. T. Halket**, and **J. W. Burleson**. Mr. Halket is now general sales manager of glass-lined water heaters. Before being made assistant general sales manager last February, he managed water heater sales in the Boston district. Mr. Burleson, now general sales manager of home heating and air conditioning sales, served on the Permaglas headquarters staff before becoming assistant sales manager of those products early last year.

Orra A. Rice has been promoted to sales manager of the manufacturing division of the Meyer Furnace Co., Peoria, Illinois. Active in heating and air conditioning sales work for many years, he was sales supervisor of the company following a period as territorial sales representative.

Geo. D. Roper Corporation has named **Sol W. Weill** to the position of Eastern promotional manager, with offices in Philadelphia. Mr. Weill, who joined Roper in 1939 as sales representative, will now be responsible for stimulating the sales of Roper built-in gas ranges in the Eastern area. He will also do sales promotion work in connection with LP-Gas sales, and will cooperate with the gas industry in general in the sales of Roper gas ranges.

In line with the expansion of the Denver branch office of Rockwell Manufacturing Company's meter and valve division, **Orville Cochran** has been promoted from Denver branch manager to district sales manager. Mr. Cochran joined the company in 1922. He spent the first eight years in the Kansas City district office, the next 25 in the Rocky Mountain area as a sales engineer.

Dr. Stuart D. Faunce has been named director of new product development by John Wood Company. He will be responsible for both the development of new products and major changes to existing products. During the past two years he has been a research engineer for Armour Research Foundation, and was formerly a member of the faculty at University of Oklahoma's School of Petroleum Engineering.

Penn Controls has announced the appointment of **Francis X. Fessler** as manager of its heating and gas appliance controls division, succeeding **Jack Searls** who resigned to join a firm manufacturing heating and air conditioning equipment. Mr. Fessler will retain his responsibility for gas appliance control sales, while assuming charge of the heating controls division. He had been division manager of the gas appliance and pump and air compressor controls division. **Robert L. Place**, who assisted Mr. Fessler in that division, has been named as assistant in the new heating and gas appliance division.

William S. Sutherland has been appointed advertising manager of Mueller Climatrol division of Worthington Corporation. Prior to joining the company as assistant advertising manager a year ago, he was with the advertising department of the Centralab division of Globe-Union. The company also announces the appointment of **Curt Hoerig**, formerly assistant to the vice-president in charge of manufacturing, as manager of manufacturing; and that of **Carl Quick**, formerly industrial relations director, as general superintendent.

Secretary Seaton appoints National Petroleum Council for 1957

APPOINTMENT of members of the National Petroleum Council for this year has been announced by Secretary of the Interior Fred A. Seaton. The council, established in 1946, has conducted many special studies for the Department of the Interior and its Office of Oil and Gas. In the coming months, it is expected that the council will be called upon to prepare additional reports for use by the government.

The roster of council members includes the names of nine gas industry leaders. They are: James Comerford, president, Consolidated Natural Gas Co.; J. J. Hedrick, president, Natural Gas Pipeline Company of America; D. A. Hulcy, president, Lone Star Gas Co.; Paul Kayser, president, El Paso Natural Gas Co.; W. G. Maguire, board chairman, Panhandle Eastern Pipeline Co.; N. C. McGowen, board chairman, United Gas Corp.; George T. Naff, board vice-chairman, Texas Eastern Transmission Corp.; C. Pratt Rather, president, Southern Natural Gas Co.; and G. S. Young, president, Columbia Gas.

Ferguson, Williams elected to Ohio Fuel board

WILLIAM E. FERGUSON, vice-president and manager of production for the Ohio Fuel Gas Co., and Frank S. Williams, vice-president in charge of distribution, have been elected directors of the company. Both are members of A. G. A. Mr. Ferguson has been in the natural gas industry for 39 years. He started as a draftsman with the old Logan Gas Company in Columbus, and later served as chief civil engineer with Ohio Fuel. He was named production manager in 1950, and was elected a vice-president in 1952.

Starting with Ohio Fuel in 1927, Mr. Williams was named personnel director in 1929, and served as district distribution manager in Springfield and in Columbus before being named Ohio Fuel business promotion manager in 1950. He was elected vice-president the same year, and was made vice-president in charge of distribution in 1951.

Delaware names five

R. B. RICHARDSON has been elected vice-president in charge of operations at Delaware Power & Light Co., and Fred T. Bear has been elected vice-president in charge of engineering. Both report to Frank P. Hyer, vice-president operations, engineering, and construction. At the same time, Harold W. Clift was appointed operating manager; Charles W. Minich was promoted to manager of gas operations succeeding Mr. Clift; and Carl R. Roehm was made superintendent of gas distribution department.

Danielson succeeds Sauer at PG&E

J. F. SAUER, North Bay division gas superintendent for the Pacific Gas and Electric Company since 1939, retired Jan. 1. His successor is H. A. Danielson, his former assistant and until recently superintendent of gas distribution in PG&E's Sacramento division. Mr. Sauer's career with PG&E spans more than 44 years, most of it spent in San Rafael. He joined the company there in 1912 as a gas department draftsman, rose steadily to become Marin district assistant superintendent in 1917, Vallejo district superintendent in 1919, and Colgate division gas superintendent at Marysville in 1924. He returned to San Rafael as North Bay division gas superintendent in 1939. Mr. Danielson joined PG&E as a clerk in Sacramento in 1930. Spending his entire career in PG&E's gas department, Mr. Danielson rose to the post of general foreman in charge of production at the Rio Vista natural gas field in 1945. He was named superintendent of gas distribution for the Sacramento division in 1952. Both men are members of the American Gas Association.

Manufacturers announce new products and promotions

PRODUCTS

● Ruud is now marketing the A-138 Alcoa aluminum alloy storage system, which helps solve various storage problems in installing or maintaining hot water supply in commercial applications. It consists of a 115-gallon tank, mounted on a base 2½ inches high, and enclosed with heavy insulation within a steel jacket that has a baked enamel finish. The system can be equipped with Ruud's two-temperature kit, so both 140-degree and 180-degree water can be withdrawn simultaneously. It can be secured for installation with the Ruud AS 20-80 Sanimaster, in which case Ruud supplies all circulating pipe connections and fittings, or with other makes of gas water heaters.

● A new light-weight, internal-relief service regulator with almost double the relief capacity of any previous model has been introduced by Rockwell. Available with die-cast aluminum upper and lower diaphragm cases, the new Rockwell 143 regulator has a 360-degree swivel design. This enables the regulator to vent downward, so that no condensate can collect in—or rain enter—the vent on outside sets. When the internal relief valve is open, there is direct upward venting through the spring housing. The relief capacity of the Rockwell 143 is approximately 3,000 cubic feet per hour, with outlet pressures of one pound or less.

● Production of a new automatic control for high-capacity gas home heating units is announced by Robertshaw-Fulton. This control, the HC-E, includes in one unit a positive snap-action gas valve, an automatic pilot with 100 per cent shut-off feature, and a built-in pilot filter. It was developed for use on central heating furnaces with ratings up to 200,000 Btu per hour (natural gas). The valve actuator is a short, electrically insulated rod made of high-strength alloy, which expands and contracts on call from the room thermostat, eliminating the need for a solenoid.

● The popularity of barbecuing has influenced the design of a new series of Caloric gas ranges. This moderately priced "Two" Series with standard and deluxe models features a Roto-Roaster rotisserie. Range sizes are 20, 30, and 36 inches. The "Two" Series also features four high-speed top burners with a 12,000 Btu capacity; Tri-Set valves with click-stop settings for boil, simmer, and keep-warm heat and innumerable settings for in-between heats; and a silicone oven-door seal. Caloric is also offering a separate built-in oven-broiler unit which is larger looking and 1¼ inch deeper, but fits the same cut-out dimensions of previous Caloric built-in oven-broilers. The unit is clock-controlled, and features the Roto-Roaster rotisserie and an automatic meat thermometer.

PROMOTIONS

● Selas has revised its Bulletin SC-1006, Selas Combustion Safeguards, which described the operation and construction of Selas automatic fire checks and Selas safety blowouts. The fire checks detect, localize, and extinguish flashback in mixture supply line where a combustible mixture of fuel gas and air is distributed to heating equipment; the safety blowouts prevent flashback and relieve excessive flashback pressure in combustible mixture main supply piping.

● Holly has published a new four-page folder which illustrates available Stubby floor furnace models, with a specification table containing selections and installation data. An easy-to-understand drawing shows how air is heated and circulated into rooms.

● General Controls offers a new catalogue, Combustion Controls and Instruments, which covers everything required for a complete combustion installation, such as automatic draft control instruments and actuators; solenoid, diaphragm and motor-operated valves for gas, oil, steam, and water; time stwitches, relays, and oil burner primary controls.

R. S. Child retires

ROLAND S. CHILD, associate director of personnel administration at Central Hudson Gas & Electric Corp., retired Jan. 1 after almost 37 years of service with the system. He joined Central Hudson in 1920 as an assistant to the president; and later served as fixed capital engineer; and in personnel work, where his principal assignments related to employee welfare plans. He was largely responsible for the development of Central Hudson's life insurance and retirement plans, and its recently instituted health benefit program. Mr. Child is a charter member and past chairman of the A. G. A. Committee on Personnel Practices, and is known for his work on pension plans. He helped initiate plans for the employees of numerous organizations, including A. G. A.

Elect Lau Bach

NEAL B. LAU BACH has been elected vice-president in charge of operations of Colorado Interstate Gas Co., Colorado Springs. Mr. Lau Bach was since 1947 vice-president of Hudson Engineering Corp., which is currently building a compressor station for Colorado Interstate. He was employed by American Locomotive Co., 1944-47; Stone & Webster Engineering Corp., 1941-44; and Cities Service Co., 1928-41. Working with Mr. Lau Bach will be Vice-President G. F. Brunston, a veteran Colorado Interstate official. In addition to handling special engineering, operations, and research matters, Mr. Brunston will assume new duties in an advisory and policy-making capacity on the executive staff and management committee of the company.

Whittelsey president

FORD, BACON & DAVIS, Inc., engineers-constructors, and its Canadian subsidiary announce the election of C. C. Whittelsey, executive vice-president, as president of the company. He succeeds E. S. Coldwell, who will actively continue as chairman of the board. Mr. Whittelsey was in charge of the engineering and construction of many of the large-scale projects handled by the firm, such as the natural gas pipeline system of American Louisiana Pipe Line Co., extending from Louisiana to Detroit, and Westcoast Transmission Co., Ltd.'s natural gas pipeline from the Peace River area and Alberta to the U. S.-Canada border. Mr. Coldwell, who has been with the firm since 1926, has been its president since 1949.

Mr. Whittelsey is a member of A. G. A.

George Doying

executive secretary of the Pennsylvania Natural Gas Men's Association, died Jan. 11 at his home in Pittsburgh, Pennsylvania. His age was 44.

Mr. Doying had been an editorial writer for *The Pittsburgh Press* and worked for several years in International News Service bureaus in Pittsburgh, Harrisburg, and Cleveland.

Philip T. Dashiell

retired vice-president of the Philadelphia Gas Works, died Dec. 25, at the age of 77.

Mr. Dashiell was graduated from Yale University in 1899, and joined the Philadelphia Gas Works the same year as a cadet engineer. In 1904 he was transferred to the Public Service Corporation of New Jersey as assistant engineer of the Essex division, and returned to Philadelphia as assistant engineer of works in 1913. He retired from the Philadelphia Gas Works in 1947, and served as a consulting engineer for United Engineers & Constructors, Inc., from 1947 to 1953.

For his technical work in the field of gas manufacture, Mr. Dashiell was awarded the Beal Medal of the American Gas Association in 1931, the Walton Clark Medal of The Franklin Institute in 1932, and the Distinguished Service Award of the American Gas Association in 1948.

He was a member of the American Gas Association for 38 years, a life member of the Society of Gas Lighting, and a past president of the Pennsylvania Gas Association.

Mr. Dashiell is survived by his wife, the former Alice Paschall, and two daughters.

Howard W. Memmott

industrial sales manager of The Connecticut Light and Power Co., died suddenly Dec. 22 of a heart attack. Before his appointment in 1951 as CL&P's industrial sales manager, he served for many years as industrial sales engineer for the Danielson district and later for the company's entire Eastern division.

Mr. Memmott received his degree in engineering from Brown University in 1933. He was active in many utility groups, including the New England Gas Association.

He is survived by his widow, three children, his mother, two brothers and a sister.

Ralph D. Stauffer

president, director and chief engineer of the NEGEA Service Corp., and chief engineer of New England Gas and Electric Association subsidiary companies, died suddenly on Dec. 31. He was 58 years old.

Mr. Stauffer was elected president of NEGEA Service Corporation with headquarters in Cambridge, Mass., in April, 1956. He was chief engineer for the gas and electric utility system since 1941.

A 1921 graduate of Penn State University, Mr. Stauffer had been associated with the electric and gas utility business for more than 30 years. He was a member and past president of the Massachusetts Society of Professional Engineers and a member and past vice-chairman of the American Society of Mechanical Engineers.

Mr. Stauffer leaves a wife, Naomi Riegel Stauffer, a son, two daughters, and two sisters.

Thomas F. Kennedy

77, a retired executive of Cities Service Co., died recently following an operation.

Mr. Kennedy joined the Denver Gas and Electric Company as a meter reader, and advanced to the post of general new business manager of all the public utilities formerly owned by Cities Service. He had retired in 1950.

Mr. Kennedy originated a number of service and promotional practices now widely used by utility companies.

He is survived by his widow, Jesse Ward Kennedy.

"Playhouse 90"

(Continued from page 3)

tory. In the next few weeks, Americans will be seeing even more of Julia. Gas companies across the land are planning to put her familiar face on their monthly bills."

Miss Meade will appear in gas commercials each week on over 125 stations of the CBS-TV network. The series of commercials includes spotlights on each of the seven residential uses of gas, and an "omnibus" commercial, which will cover all seven uses.

Miss Meade will also be available for local utilities who wish to make special arrangements with her for their own TV commercials, or who wish to have her appear in person.

"Playhouse 90" was thrice honored last month, in *Radio-Television Daily's* All-American Poll for 1956. The series was selected as the Dramatic Show of the Year, the producer, Martin Manulis, as Producer of the Year, and the director, John Frankenheimer, as Director of the Year.

Plans now lead the program well on its way to doing even better next year. Soon to be seen on the show are such top stars as Claudette Colbert, Helen Hayes, Paul Henreid, and Joanne Dru, in plays by such top writers as F. Scott Fitzgerald and H. Allen Smith.

Mrs. America

(Continued from page 15)

General Foods Corporation is a sponsor this year, as well as The Gorham Co., the old established silver company. Others are the Singer Sewing Machine Co.; Wilson and Co., meat packers; West Bend Aluminum; and Emile Bernat & Sons, a well-known yarn manufacturer.

These newly-signed sponsors join the group of gas appliance sponsors—the Gas Range Division of GAMA, Robertshaw-Fulton Co., Servel Inc., and the John Wood Co.—and, outside the industry, the Proctor Company and DeSoto Division of Chrysler Corp., in forming a powerful group of firms lending support to the Mrs. America promotion. City of Fort Lauderdale is also a co-sponsor.

These sponsors are all donating trophies to the winners of the various homemaking competitions at the national finals. They are also donating a group of state prizes—worth more than $600 a state—to the gas companies to give to their state winners, at no cost to the gas companies.

These prizes for state winners are: a $100 U. S. Savings Bond and an engraved miniature Liberty Bell, donated by DeSoto Division of Chrysler Corp.; a four-piece sterling silver place setting of any one of the 18 Gorham patterns, given by the Gorham Co.; an adjustable ironing table and toaster donated by Proctor; an Ice Magic service set given by Servel; a featherweight portable sewing machine by Singer; a nine-piece set of West Bend aluminum cooking utensils; and a sterling silver meat platter from Wilson and Company.

This 1957 contest marks the fourth year of A. G. A. participation in the Mrs. America promotion. From the first, A. G. A. changed it from a beauty contest into a search for the nation's top homemaker. The contest has grown each year, with more and more gas companies gaining confidence in the new venture. Last year 100 gas companies representing more than 15 million meters joined the contest.

The obstacles that arose in changing the format over from beauty to homemaking contest have been overcome little by little. The major changes in this year's contest represent the latest endeavor to bring the Mrs. America promotion up to the level of usefulness for the gas industry envisaged by A. G. A. when it first signed up to participate in the promotion.

New housing

(Continued from page 24)

an unavoidable time-lag already exists in gathering, collating, reproducing and distributing the data.

In using service organization reports, be aware that they tend to under-report on smaller projects. While this does not preclude their use, it may necessitate supplementing them with data from other sources.

Another possible source of information about residential construction is the real estate board, or similar group of real estate dealers. Experience has shown, however, that these bodies sometimes tend to be rather careless in their methods of compiling data. The decision to use data from this source, either as primary information or as a supplement to information from other sources, will depend upon circumstances.

The mortgage loan departments of community banks and savings and loan associations generally keep tabs on new residential construction in their entire marketing area, which is far more extensive than the actual city or community itself. Any of these agencies may be willing to share the information they have compiled, perhaps on a cost-sharing basis.

The county agent, the farm bureau representative, or the county clerk's office generally maintains records or, at any rate, has informal awareness of sales of presently agricultural or unimproved land. On the rural or semi-rural fringes of a community, any parcel that changes hands may be regarded as a possible site for building development, and the transaction should be brought to the attention of new business representatives of the company. This is particularly true if the new owner of a given parcel is known in the community to be a builder, developer, or speculator in real estate.

Rather than have company personnel copy data on land transfers from county records, the county clerk's office, or the recorder's office, may be prevailed upon to send periodic notices of such transfers to the company market research department. Again, this service may entail payment of a fee.

Areas that are outside city limits usually do not have ready access to water mains. Therefore, any new homes in such areas must have wells dug, or else must apply to the local water company for extension of water mains. There is probably a limited number of well-diggers in each area; it may be possible to gather information from each one.

The usefulness of applications for new connections to existing water mains depends upon the practices of local builders. In some communities, making application for house connections to water mains is one of the first orders of business in building operations, to provide water needed in construction. In putting up a development, on the other hand, some builders will arrange for only one or two connections on the site for building purposes, making applications for individual dwelling connections only as the new homes are nearing completion.

Some companies are in the fortunate position of having no heating restrictions and enjoying such eager acceptance of gas for househeating that they can count on virtually 100 per cent heating saturation in new homes throughout their areas. In this case, the builders themselves approach the utility to arrange for main extensions, service connections, meter setting, etc., when they plan to build new homes.

Total reliance on this procedure has two major weaknesses. First, it takes no count of the small proportion of homes not installing gas heat, and therefore provides no way of checking the size of the possible inroads of competitive fuels. More important, it leaves the initiative up to individual builders, and makes no provision for specifically convincing them to install other gas appliances as well before their buying and building schedules are consolidated.

The aid of meter readers can be enlisted to keep track of new developments. They can be trained to report all locations where new homes are under construction or where it is evident that construction will soon start. Meter readers' reports then should be followed up by new business representative contacts, to determine the number of units being built on a given site, the construction starting date, and the name of the builder.

If the company service area is fairly circumscribed and the new business department sufficiently staffed, systematized personal contact with area builders is the most economical method. In this instance, the functions of gathering, recording and using new homebuilding data merge, as staff men discuss with local builders their construction plans for coming months and the equipment the builders will provide in each new home.

In addition to the regular informal exchange of information between builders and utility builder-contact men, the company may undertake periodic surveys of the current and long-term building plans of local builders and developers, perhaps in cooperation with the local home builders' association. When such surveys are conducted far in advance of actual housing starts—timed, perhaps, to coincide with the seasonal slack period in building—the results are a useful tool to the utility. They are valuable to builders, too, in analyzing local housing market prospects and competition.

Few builders would disclose details of their operations and plans to their competitors, but the prestige of the utility as the compiler and tabulator of the information may give assurance that the individual responses will be kept absolutely confidential. Analyses of new housing planned by price class, by area, and/or by type of home, prepared by the utility, would be available only to cooperating builders. Naturally, long-range plans are quite flexible, and are frequently altered by circumstances; they may even be changed as a direct result of the information disclosed by the survey itself. Nevertheless, systematic annual surveys of builders produce valuable and useful results.

After new housing is located, and for dwellings where the builder has not already contacted the gas company, the data are referred to the new business department for follow-up.

This department should record the results of its efforts, whether success or failure, in terms of which gas or competing appliances are installed. It is important to impress the necessity of recording data even where the sales effort was relatively unsuccessful in order to insure complete records.

These records can be used by the new business department to assess the relative competence of the several new business representatives, and to discover which of the builders in the company service area should be made the targets of special educational efforts.

These records will also aid the sales department to determine which purchasers of new homes will become prime prospects for sales of extra convenience appliances, either immediately or within the next few years. These include gas clothes dryers, incinerators and additional comfort space heaters. In future years the list of now new dwellings will be a list of prospects for replacement appliances.

If the utility itself does not merchandise appliances, the list of addresses can be sent to cooperating local appliance dealers as sales prospects.

The promotion department can use the records as a talking point in gas promotion. Quoting high saturation of gas cooking in new homes may prove useful in selling replacement ranges to present customers. The records will help to plan promotion expenditures on the basis of the relative importance of various segments of the new housing market, and to schedule builder promotions at the most effective time.

When operating departments prepare load characteristics studies, the recorded new dwellings form a ready-made sample whose appliance combinations and saturations are known and whose physical characteristics may be found from the permits under which they were built. They will be useful to update estimates of load on the several mains of the company distribution system, and to anticipate hourly and seasonal demands and thus avoid serious pressure drop at peak periods.

In economic analysis and planning the records will serve as an indication of the direction and extent of growth of the area to help determine main extension policy. Future gas requirements can be planned with knowledge of trends in appliance saturation and area growth.

Safety program

(Continued from page 19)

costs are made a part of this accounting record.

Another complete written report is required for each lost time accident. This report is prepared by the supervisor in charge, who not only gives the details of the accident, but gives the corrective action taken to prevent its recurrence. This insures the supervisor will make a complete study of each accident.

This written report, which is in addition to the report that went to the accounting department, is sent to the chairman of the Central Safety Committee. He uses these reports to keep a running day-to-day record, and to compile his monthly and annual reports.

Through these reports, the safety coordinator can record each supervisor's department experience, and can break down the company's accident record into the smallest components. For example, "repeaters" show up quickly, and any pattern of accidents is quickly revealed.

Acceptance of personal responsibility by the employees is encouraged through active participation in the safety program. There are ten local safety committees, ranging in size from ten to three men, depending on the number of men employed at each work point.

The supervisor in charge is a permanent member of the local committee, but the balance of the membership rotates each quarter. Over a year's time, at least 100 men, or one-fifth of all employees, has served on the local committees.

Office employees do not have a local committee, but one person is designated to be in charge of safety at each office.

All regular safety meetings are designed to stir the employee's personal interest as much as possible. While safety matters take first place at these meetings, related matters are permitted to come up for discussion. Occasionally, other company projects are announced or discussed, such as a discussion of the Blue Cross plan by a representative, a camera contest and a company picnic.

Training is not restricted to the regular monthly meetings. Safety instruction is carried out on the job while the procedures under discussion are actually being used.

Special meetings are sometimes called if an unsafe working condition is detected. These meetings are of especial importance if some exisiting condition or practice could lead to serious consequences involving either the employees or the public.

Medical examinations are given before employment, but yearly check-ups are not in practice. The company does not employ doctors, but has a number of doctors on call for injury cases. Employees are encouraged to take medical attention even for minor injuries. Complete physical examinations are sometimes required following a serious accident or illness.

The safety program has resulted in an

increased use of medical facilities, as the importance of taking care of any injury, however minor, has been emphasized. Another result has been a noticeable increase in the number of accidents and injuries reported, though at the same time the number of lost time accidents has dropped sharply.

This willingness to report all incidents reflects the keen interest in accident prevention displayed on levels of the company. These reports provide the material from which the Central Safety Committee can study accident patterns and come up with accident prevention methods.

Here are three typical written reports on three lost time accidents.

" 'A' was in the process, along with the balance of a service crew, of driving an 1½-inch service underneath a paved street. When doing this type of installation we utilize a winch that is mounted on the back of a service truck. This winch has recently been changed from an older truck to a new vehicle purchased this year, and it seems that when they mounted the winch they did not permit the shaft to protrude beyond the tail gate of the truck far enough. The shaft of the winch when being used has a ratchet wrench that fits over the shaft that applies the power to it. Because this shaft did not protrude far enough the ratchet wrench did not fit completely on the shaft. As 'A' applied his strength to the wrench it slipped off striking him over the eye and since he was off-balance he fell down and hit the back of his head on a rock. This combination of bumps was severe enough to knock the employee unconscious from one to two minutes and resulted in two days' lost time.

"Since then the winch has been extended and modified to preclude it slipping off again."

"Mr. 'B' was standing on the 8-inch piping of the orifice meter run for Keelor Storage while he operated a valve to regulate gas delivery to this storage. The piping of this meter run is about three feet above ground. His foot slipped off one of the pipes and he fell between the meter runs, striking his right side on one of the pipes. . . . The X-ray showed the seventh and eighth ribs on his right side were cracked but no injury to his right arm or shoulder. The muscle of his right shoulder is strained. He will possibly be off duty for four or five days.

"We see now that we should have had a platform on this piping for the operators to stand on while they are operating these valves. We are now installing a platform at this location.

". . . Mr. 'C' jumped backward off the truck, right side, landing on both feet. The right foot struck a stone, severely spraining right ankle. As a result, Mr. 'C' lost two days' work, spoiling our record of 11 months without a Time-Lost Accident. We feel that had Mr. 'C' thought before he acted, using the running board instead of jumping, this accident could have been prevented.

"Mr. 'C' was a member of our Safety Committee during June, July and August. This accident will be thoroughly discussed and evaluated by our Safety Committee and then presented to the employees at our regular Safety Meeting."

These are typical cases—and these three, at least, seem to bear out the A. G. A. Accident Prevention Committee's slogan: "Accidents Don't Happen—They Are Caused."

Public and employees

(Continued from page 10)

issue regarding not wanting to dirty the floor, some customers might have misconstrued his comments to indicate a sarcastic attitude of a floor which should have been cleaner than the one at hand!

Employees not only affect public relations through public and customers, but also through friends and acquaintances. Many subjects are discussed over a table of bridge, canasta, or poker. When one of the players is an employee of the gas company, the subject may well turn to rates, service, safety, or any of a hundred other aspects of the gas business.

The attitudes expressed by the employee are likely to carry considerable weight with other members of the group. After all, he works for the company; ipso facto—an authority.

One of the interesting psychological manifestations of people in general is that they tend to trust their own experiences, or experiences of persons known by them, more than other evidence which may actually be far more accurate and conclusive.

Let me illustrate by one simple question. Suppose you read a full page newspaper advertisement telling you how wonderful a company or its product or service is, and shortly afterwards talk over the backyard fence with your next-door neighbor who is an employee of that company. Suppose he says, "That's a lousy company to work for, I'd get another job in a minute if I could."

What is your reaction? Do you believe the ad or the neighbor? Your neighbor, of course. And the outcome would be the same if you first talked to your neighbor and then read the ad. It's not a case of the second impression being the more potent, but rather the more personal your experience the more ready you are to accept it.

Granting that employees play an important part in determining our public relations, what can we do to make sure they affect public relations favorably rather than unfavorably? An answer to this question can follow either of two approaches. It can deal with specifics or with principles.

Paradoxically, an answer in terms of principles is more valuable theoretically, but an answer in terms of specifics is often more practical.

In terms of basic principles, an employee will do a good public relations job if he has the know-how and if he has the desire. The know-how is handled by training. The employee must be trained to do an adequate job in whatever his field of work may be: meter reading, installation, servicing, collection, or what have you.

Training is also needed along general informational lines. To do a good public relations job, the employee must know considerably about the company. How often have you been asked: What is the best type of furnace to buy? Will gas rates go up? How much odorant is put into the gas and how?

Possession of adequate information and know-how is necessary in order that the employee *can* do a good job. Then comes the important problem of making sure that he *will* do a good job.

A basic principle here is to make sure that the employee emotionally identifies himself with the company. Social psychologists talk about "expanded personalities." This occurs when we identify with something. It involves emotional attachment.

For example, you know what I mean

when you think of your reaction to a neighbor referring to your children as "those bratty kids." Identification can occur with things as well as with people. To illustrate this point I need merely ask how you would react if a passerby deliberately spit on a new car which you had recently purchased? That passerby is on just as dangerous ground as though he had insulted your wife!

In similar manner, people identify with companies. The employee who obviously has done so is typically spoken of as being loyal.

A second basic point in getting employees to want to do a good public relations job is to increase their personal esteem. This involves both an increase in pride (how they look upon themselves) and an increase in prestige (how others look upon them).

These are the principles for improving public relations through our employees: train the employee so he can do an adequate job, get him to identify with the company, and increase his personal esteem.

These basic principles for good public relations are simple. The follow-through is difficult. The follow-through also lacks glamour. It requires dealing with individuals, emphasizing what is often considered trivial and insignificant. But such emphasis pays off.

As Michelangelo said, "Trifles make perfection, and perfection is no trifle."

Automatic lighting

(Continued from page 11)

of automatic ignition equipment and be prepared to service immediately the devices in case difficulty arises. The types of controls used in commercial gas cooking appliances are of individual design, and all concerned with any phase of installation and/or service should be familiar with the operation and servicing of these controls—*before* the customer calls for information or service.

The question may be brought up regarding firm contracts placed for equipment in 1956 for delivery in 1957. A release by the A. G. A. Laboratories of Nov. 30, 1956 states, "It is recognized, however, that some manufacturers of these appliances may have existing commercial contracts for future delivery of equipment not having automatic pilots serving enclosed compartment burners. Such existing contracts, extending for a reasonable length of time, may be fulfilled, but upon their completion will be withdrawn. Manufacturers who must produce hotel and restaurant ranges, deep fat fryers or portable baking and roasting ovens without automatic pilots subsequent to January 1, 1957 in order to carry out existing contracts should advise the Laboratories promptly to this effect, indicating the extent and probable completion date of the contract so that our records will be complete. This will materially assist the Laboratories in event of questions from the field.

Flow measurement

(Continued from page 21)

discharge is .984 with a tolerance of plus or minus one per cent for values of the diameter ratio between 0.4 and 0.75 and for pipe Reynolds numbers larger than 200,000.

These values were obtained for venturi tubes designed according to figure 1.

This design is in agreement with resolution 3 (WG 1—Paris 1952) and with resolution 2 (WG 1—Paris 1954) except for the radii of the transitions between the pipe and the inlet cone and between the inlet cone and the throat.

In view of the large number of experimental results available for these venturi tubes, it is recommended that the proportions shown on page 21 be adopted for the international standard.

3. The effect of increasing roughness of the converging cone is to decrease the coefficient of discharge.

4. The effect of increasing roughness in the pipe is to increase the coefficient of discharge.

5. Aging may have an effect on the roughness of both the converging cone and of the pipe.

6. The changes in the coefficient mentioned under items 3 and 4 are more important for larger diameter ratios than for smaller diameter ratios.

7. It is suggested that the standardization of the values of the coefficient of discharge be deleted from the present report (document 104). However, the conclusions mentioned in items 1 to 6 should be included in an appendix.

8. It is recommended that experimental studies be continued and particularly

CONVENTION CALENDAR

1957

MARCH

7 •GAMA Automatic Gas Range Conference, Barbizon Plaza Hotel, New York City.

11-15 •National Association of Corrosion Engineers, Kiel Auditorium, St. Louis, Mo.

21-22 •New England Gas Association, Annual Meeting, Hotel Statler, Boston, Mass.

25-27 •Mid-West Gas Association, Hotel Nicollet, Minneapolis, Minn.

25-27 •A. G. A. General Management Section, Annual Conference, Edgewater Gulf Hotel, Edgewater Park, Miss.

28-29 •Oklahoma Utilities Association, Annual Convention, Tulsa Hotel, Tulsa, Okla.

APRIL

8-10 •GAMA Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.

8-10 •National Conference of Electric and Gas Utility Accountants, Sheraton Park Hotel, Washington, D. C.

8-11 •A. G. A. Distribution, Motor Vehicles and Corrosion Conference, Rice Hotel, Houston, Texas.

16-18 •A. G. A. Sales Conference on Industrial and Commercial Gas, Jung Hotel, New Orleans, La..

25-26 •Indiana Gas Association, Annual Meeting, French Lick-Sheraton Hotel, French Lick, Ind.

29-May 1 •Southern Gas Association, New Orleans, La.

MAY

6-7 •A. G. A. Residential Gas Section, Eastern Sales Conference, William Penn Hotel, Pittsburgh, Pa.

6-8 •Air Conditioning and Refrigeration Institute, The Homestead, Hot Springs, Va.

6-10 •National Restaurant Association Convention and Exposition, Navy Pier, Chicago, Ill. (A. G. A. will exhibit)

7-9 •A. G. A. Research and Utilization Conference, Hotel Carter, Cleveland, Ohio.

8-10 •Joint A. G. A.-PCGA Gas Supply, Transmission and Storage Conference, Mark Hopkins Hotel, San Francisco, Calif.

12-15 •LPGA Annual Meeting, Conrad Hilton Hotel, Chicago, Ill.

19-22 •Industrial Heating Equipment Association, Hot Springs, Va.

20-22 •A. G. A. Mid-West Regional Gas Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

20-22 •A. G. A. Chemical, Engineering and Manufactured Gas Production Conference, Balmoral Hotel, Bal Harbour, Fla.

Personnel service

SERVICES OFFERED

Chemical Engineer—14 years' experience including over five years in natural gas work on deliverability studies, natural gasoline plant design and start-up, transmission, conditioning, measurement, automatic control, underground gas storage, and preparation of the technical aspects of FPC cases. Desires opportunity to use training and experience in a position of growth potential. MS in chemical engineering, married, 36 years old. **1854.**

Gas Engineer—Desires position in gas utility where 25 years' experience in engineering, operations and management will be of value. (45) References. **1855.**

Executive position—experienced natural gas man desires executive position with a natural gas company. Registered professional engineer with 20 years' experience in many phases of natural gas operations including distribution and transmission, financing, sales, federal and state regulatory matters, construction supervision, contract negotiations and top management. Well known throughout the gas industry, highly capable of handling top management position. Age 40, married. More detailed information and references upon request. **1856.**

Superintendent or General Foreman—with long experience with all types of gas, manufacture, distribution and service. Well recommended. Employed at present. **1857.**

Sales Manager—home appliance sales experience (9 years wholesale, 2 years retail manager), can hold sales training meetings, handle advertising; engineering background. Minimum salary $10,000. **1858.**

Director of Training and Executive Development—broad experience with major companies. Fully capable of improving effectiveness of sales force. Thoughtful human relations approach to development of supervisory and executive personnel. Excellent academic background. **1859.**

Public Relations Director—excellent corporation experience. Versatile, creative, imaginative, capable of promoting practical program. Has directed community relations and company-distributor relations programs; fully experienced in organizing conferences, making speeches, preparing public relations literature. Fine academic background; top references. **1860.**

Experienced Industrial Salesman—available for interview as a factory or a dealer representative. Have covered all phases of public utilities sales, servicing and dealership. Travelled around the country converting small and large industrial plants to natural gas. **1861.**

Management Engineer—MSE in civil engineering. Nine years' experience in general construction planning, management and in utility supply. Successful in supervising engineering staffs and large organizations. Experienced in planning and administering construction budgets. Job must offer career growth and should provide some opportunities for travel. **1862.**

Gas Distribution Engineer—B.S. in M.E., seven years' experience with a medium size, mixed gas New England utility. Broad experience in distribution design and supervision of construction and maintenance. General knowledge of customer service and meter departments. Desires a responsible position in a gas or combination utility or allied industry. **1863.**

POSITIONS OPEN

Young Engineers—Philadelphia utility with divisions in Eastern Pennsylvania can use four recent engineering graduates. Will be given groundwork in all departments of company before regular assignment. In reply please state age, education, experience—if any. **0830.**

Engineers—Philadelphia utility can use two engineers experienced in gas distribution. Please state age, education, experience and other background information in replying. **0831.**

Home Service Supervisor—Woman to take charge of new home service department opening in city 40 miles from Milwaukee Wisconsin. Progressive community, 40,000 population, lake area. Degree in home economics required, experience in home service or allied field necessary. Give full details as to educaion, experience, marital status and salary expected in first letter. **0832.**

Gas Service Engineer—fast growing progressive Midwest gas utility with 14,000 customers is seeking a graduate engineer with particular experience in customer service to take immediate position as assistant service supervisor leading to position as supervisor within three years and possible higher executive positions. Must have executive ability to supervise and train service men and other personnel in customer relations. Age bracket under 40 years. Give complete background, experience and references. Replies will be held confidential. **0833.**

Economist-writer—for economic consulting firm in natural gas—public utility field, in Washington, D. C. Degree in economics with courses in public utilities preferred. Legal background helpful. Salary open. Replies held in confidence. Submit resumé with salary requirement. **0834.**

Gas Rate Engineer—Current vacancy in Lansing, Mich., as Assistant Chief, the Gas Section of the Public Utilities Division of the Michigan Public Service Commission. Degree in engineering required, preferably in mechanical or chemical—and professional experience with a public gas utility as a government agency regulating such service. Salary range $6,600 to $9,750 per year depending on qualifications. Submit complete resumé and desired salary to Michigan State Civil Service Commission, Recruitment and Placement, Lansing 13, Mich. **0835.**

Gas Engineer—graduate engineer with four years or more experience and background in gas transmission engineering and operations—design of compressor station, pipeline, and related facilities—for position of staff engineer, chief engineer's office of large natural gas transmission company. Location area—Pacific Northwest states. A considerable opportunity for development exists in this position. Salary commensurate with qualifications. Replies will be held confidential. **0836.**

Chemical or Mechanical Engineer—unusual opportunity for able, ambitious young man in research, development and testing relating to gas appliances, burners and combustion. Part of time spent in IGT education program, basic research, preparation of text material. Opportunity for graduate study; work in modern surroundings with finest scientific equipment and accomplished associates; academic atmosphere at industrial pay. **0837.**

Chemical, Mechanical, Petroleum or Natural Gas Engineer—unusual opportunity for able, ambitious young man in natural gas transmission research: fluid flow, pipeline design and economics, engines and compressors, thermodynamics. Part of time spent in IGT education program, basic research, preparation of text material. Opportunity for graduate study; work in modern surroundings with finest scientific equipment and accomplished associates; academic atmosphere at industrial pay. **0838.**

Engineer-Supervisor—to take complete charge of production for a well-established gas heating manufacturer in New England. Knowledge of A. G. A. test procedure and managerial qualities desirable. Position offers an excellent opportunity with a small well-established and growing concern. Must have drive and willingness to assume responsibility. **0839.**

Comptroller—for growing natural gas company in Pacific Northwest. Must have working knowledge of gas utility accounting and natural gas operations. Will direct all accounting activity, administer accounting system throughout company, supervise present staff of competent accountants. **0840.**

that venturi tubes be exchanged between laboratories.

9. It is also recommended that Working Group No. 1 pursue its activity as outlined by the directives of Committee ISO/TC 30 and present a complete report at the next meeting of Committee ISO/TC 30.

The consensus of the committee was that its activity should be such that the code be for practical and industrial application. It was decided that the code will be limited, at present, to essential considerations of the primary pressure devices used by industry in various countries; it will give values for their flow coefficients, including tolerances, and specifications for the use of these devices. An appendix will include working examples and computations, and examples on the assessment of errors. Regarding taps for orifice plates, it was agreed that *corner taps, vena contracta taps,* and *flange taps* will be presented in the code on an equal footing.

To clarify the committee's position concerning the extent of the measuring installation to be covered in the code, it was agreed that all parts of the installation up to but not including the secondary element will ultimately be included, either in the body of the code or in the appendix. (The primary element is the nozzle, orifice plate or venturi tube; the secondary element is the manometer or similar device.)

The committee passed a resolution to recognize the importance of the work performed by Messrs. Schlag and Stoltz in preparing the proposed code, to thank them for their efforts, and to request them to continue their work.

A final draft of the proposed code is to be prepared for presentation at the next meeting of the committee, which is expected to be called within the next two or three years.

The discussion in the meetings was lively and fruitful, the delegates were cordial and congenial, and the interpretor was efficient. The members of the German delegation had arranged the facilities for the comfort and enjoyment of the delegates, and were excellent hosts.

The committee was invited by the U.S. delegation to hold its next meeting in New York City.

Geneva, Switzerland, is the headquarters of the International Standards Organization. Sir Roger Duncalfe of London is president. Technical Committee No. 30 is one of a total of 84 technical committees in the organization.

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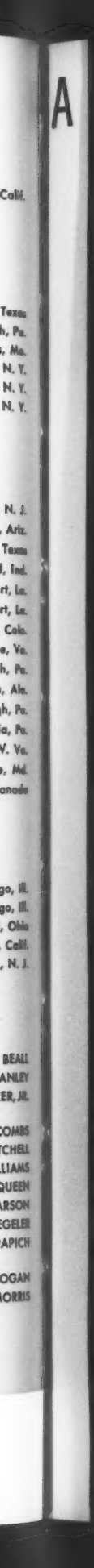
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